FINAL REPORT OF COMMITTEE

IN THE MATTER OF

ORIGINAL APPLICATION NO. 274/2020

(In Re: News item published in the "Indian Express" dated 23.11.2020 titled "Maharashtra: Two Killed, eight injured in methane gas leak in sugar factory")

IN COMPLIANCE WITH ORDER DATED 18.12.2020 & 16.08.2021 OF THE HON'BLE NGT, PRINCIPAL BENCH, NEW DELHI

FATAL INCIDENT DUE TO COLLAPSE OF BIO-DIGESTER AT M/S. LOKNETE BABURAO PATIL AGRO INDUSTRIES LTD., DIST-SOLAPUR, MAHARASHTRA

FOR SUBMISSION TO

Chairman

MAHARASHTRA POLLUTION CONTROL BOARD

Mumbai

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COMMITTEE MEMBERS

Name	Name of Institution/Department	Signature
Shri Milind Shambharkar, IAS	District Magistrate, Solapur	
Shri E. Thirunavukkarasu, Scientist 'E'	Integrated Regional Office, Ministry of Environment & Climate Change(MoEF&CC), Nagpur	
Shri. Bharat K. Sharma, Regional Director	Central Pollution Control Board (CPCB), Regional Directorate, Pune	
Prof. Anurag Garg, Professor, Environmental Science & Engineering Department (ESED)	Indian Institute of Technology (IIT), Bombay	
Dr. Santosh Ghuge, Principal Scientist	National Environmental Engineering Research Institute (NEERI), Nagpur	
Shri. Nitin Shinde, I/c Regional Officer	Maharashtra Pollution Control Board (MPCB), Pune (Nodal Agency)	

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1.0 BACKGROUND

Hon'ble NGT, Principal Bench, New Delhi initiated proceedings taking Suo moto cognizance of accident with respect to news item published in the Indian Express dated 23.11.2020 entitled "Maharashtra: Two Killed, eight injured in methane gas leak in sugar factory" vide Original Application No. 274/2020. Accordingly, the Hon'ble NGT constituted a six-member Expert committee comprising the MoEF&CC, CPCB, State PCB, NEERI Nagpur, IIT Mumbai and the District Magistrate, Solapur, vide order dated 18/12/2020. The copy of order is given at **Annexure-I**.

The Committee has been directed to meet physically or by video conferencing and also to undertake visit of the site and give a report on the following;

A. The sequence of events;
B. Causes of failure and persons and authorities responsible therefore;
C. Extent of damage to life, human and non-human; public health; and environment – including, water, soil, air;
D. Steps to be taken for compensation to victims and restitution of damaged property and environment, including the land, soil, groundwater and surface water, and the cost involved;
E. Remedial measures to prevent recurrence;
F. Any other incidental or allied issues found relevant

Further, it was also directed to suggest the guidelines for safety measures to be adopted in the setting up and maintenance of bio-digesters.

The committee has been constituted by MPCB vide office order No. BO/JD(WPC)/TB-210129-FTS-0225, dated 29.01.2021 and comprises of the following officials:

i. District Magistrate, Solapur
ii. Shri Suresh Kumar Adapa, Scientist D, MoEF&CC, Nagpur
iii. Shri Bharat K. Sharma, Regional Director, CPCB, Regional Directorate, Pune
iv. Prof. Anurag Garg, IIT Bombay, Mumbai
v. Dr. Santosh Ghuge, Principal Scientist, NEERI Nagpur
vi. Shri Nitin Shinde, I/c Regional Officer, MPCB Pune

The committee conducted site visit of M/s Loknete Baburao Patil Agro Industries Ltd., Laxminagar, Angar, Ta- Mohol, Dist Solapur – Distillery unit (hereinafter referred as the industry) on 09.02.2021 and gathered information given by the industry, MPCB during the said visit and subsequent meetings held (through video conference) on even dated 02.02.2021, 17.02.2021, 25.03.2021, 07.04.2021, 19.04.2021 and 01.06.2021, respectively.

In compliance with the Hon'ble NGT order 18.12.2020, the committee in its aforesaid meetings and after detailed discussions, decided that information/status report shall be obtained from the concerned agency, as finalised during the discussions. Further, it was also decided that safety expert from Directorate General Factory Advice Service and Labour Institute (DGFASLI) shall be requested to attend the committee meeting and provide desired information to the committee for compliance of Hon'ble NGT order.

Meanwhile, the committee had submitted its Interim Report on **"Extent of Damage to Environment and Steps to be taken for Restitution of Damaged Environment"** to Hon'ble NGT, Principle Bench, New Delhi through the nodal agency i.e. MPCB on 28.07.2021 and copy of the Interim Report of the committee is given at **Annexure-II.**

The matter was considered by the Hon'ble NGT, Principle Bench, New Delhi on 16.08.2021 and passed an order which is attached as **Annexure-III.** The Hon'ble NGT vide para 8 and 9 of its order dated 16.08.2021 directed that *"… Final report of the Committee may also be submitted to the Chairman State PCB within three months.*

The Committee may also look into the monitoring of ground water in context of leaching of spent wash and piezometric monitoring. On that basis, recommendation be made to ensure that contaminated (monitored on the basis of Colour with other parameters) water does not affect other wells of public use. The Chairman State PCB may, based on the final report of the Committee and the study report to be submitted by IIT Mumbai, ensure further remedial action. Compliance will be treated as a consent condition for functioning of the factory except that if it is aggrieved by final report or study report, it will be open to it to file objections before this Tribunal. CPCB may also issue guidelines on operation of Digesters with reference to safety".

"The interim report and the final report may also be placed on the website of the CPCB for six months so that the same can be accessed by the concerned stakeholders. We place our appreciation on record for the work executed by the expert Committee which may be conveyed to the members by the CPCB. The application is disposed of".

In compliance to the Hon'ble NGT order dated 16.08.2021, CPCB convened a meeting at CPCB, Regional Directorate, Pune with the officials of The Directorate of Industrial Safety & Health (DISH), Solapur and MPCB on 17.08.2021 and subsequent follow-ups with District Administration and committee members were also during August & September, 2021 for collection of desired information and deliberation about issues related to causes of failure, persons & authorities responsible therefor, sequence of events, steps to be taken for compensation to victims, remedial measures to prevent the reoccurrence w.r.t. safety & environmental aspects and guidelines for safety measures to be adopted in the setting up and maintenance of bio-digesters.

This report is final report of the Hon'ble NGT constituted committee in Original Application No. 274/2020 in the matter of accident at M/s Loknete Baburao Patil Agro Industries Ltd., Laxminagar Angar Ta-Mohol, Dist Solapur, and has been prepared based on the said site visit of the committee and information given by the said industry, MPCB, other information received from various agencies through the

nodal agency i.e. MPCB, and subsequent discussions and deliberations by the committee.

2.0 ABOUT THE INDUSTRY AND THE ACCIDENT

M/s Loknete Baburao Patil Agro Industries Ltd., Laxminagar, Angar Taluka Mohol, Dist Solapur – Distillery unit is engaged in production of Rectified spirit @ 900 KL/Month or Extra neutral alcohol @ 600 KL/Month or Ethanol @ 900 KL/Month and Fuel oil @ 1.8 MT/Month; using molasses as raw material procured from their integrated sugar unit located adjacent to the distillery unit. As per the Consent granted by MPCB, the distillery capacity is shall not exceed 30 KLPD.

It is gathered from the industry and also from the preliminary inspection report of MPCB Sub-Regional Office, Solapur (inspection carried out on 22.11.2020) that the distillery unit was not in operation since February 2018 and also during 2019-2020 season due to shortage of sugarcane and the distillery unit started its operation w.e.f. 02.11.2020. An accident occurred on 21.11.2020 in bio-digester of the industry causing collapsing of the bio-digester and spillage of spent wash contained therein resulting into death of two persons and injuries to eight person.

3.0 THE SEQUENCE OF EVENTS

The sequence of events, occurred during the day of accident and subsequent operations carried out after the incident as per the information provided by representative of the industry, is as follows-

Time & Date	Events
23.45 hrs (21.11.2020)	In night shift, the bio-digester tank collapsed. The bio-digester tank was located in ETP area of the distillery unit.
23.47 hrs (21.11.2020)	Distillery Chemist Shri Mauli Pawar informed to Distillery Manager & EHS Officer about the incident and the EHS Officer immediately called main gate security personnel for blowing off the emergency siren.
23.50 Hrs (21.11.2020)	Distillery Manager & EHS Officer reached to the incident site and observed that power supply was cut off, the bio-digester

	tank was collapsed and gas holder was thrown 20 ft away from its place. Degassing pond and lamella clarifier were also collapsed.
23.57 Hrs (21.11.2020)	The distillery Manager contacted to the distillery chemist and plant operator and made enquiry about shift workers.
00.00 Hrs (22.11.2020)	The distillery Manager contacted Chief Executive Officer (CEO), Chief Engineer, Chief Chemist, Civil Engineer and Environmental officer on mobile and informed about the incident.
00.07 Hrs (22.11.2020)	All the aforesaid officials arrived at incident site.
00.15 Hrs (22.11.2020)	All 10 workers immediately sent to hospital-Rural Hospital Mohol, Dist Solapur.
00.20 Hrs (22.11.2020):	Blocked spent wash flow in natural pit at down side of compost yard and new temporary pit excavated at north side of the natural pit with the help of 2- pock lane machine and 1- JCB by Civil Engineer (Shri Mane). Spent wash flow diverted to new excavated temporary pit. The work was going on till 06.00 hrs in the morning. All HOD & CEO took efforts in the work of excavation of pit and blocking the flow in natural pit and diverting the spent wash.
01.30 hrs (22.11.2020)	Information of the incident given to Mohol Police Station by Distillery Manager & Chief Engineer. Police visited the site and carried out Panchnama during 10.30 Hrs to 11.30 hrs on 22.11.2020.
	The industry informed about the incident to Talathi, Sub-Regional Officer (SRO), MPCB, Solapur and Dy. Director, DISH, Solapur on 22.11.2020 and these State Government Officials visited the site on 22.11.2020.

As a consequence of the incident, two persons died and eight persons injured. There was no damage to outside property. About 6,500 m^3 of spent wash was spilled due

to collapse of bio-digester and spread on 6 acres land, i.e., 24,282 m^2 within the industry premises thereby contaminating the soil.

3.1 ACTIONS TAKEN BY VARIOUS DEPARTMENTS

3.1.1 MAHARASHTRA POLLUTION CONTROL BOARD (MPCB):

Sub Regional Officer (SRO), MPCB, Solapur visited the site on 22.11.2020 upon information received regarding incident. The industry informed regarding operational status of distillery and accidental collapse of Bio-digester tank through letter dated 23.11.2020 (**Annexure - IV**). It was further informed through said letter that the industry was stared on 07.11.2020 for the season, after the accident, the industry has taken measures to stop the flow of spent wash flow enter into water body, avoided water pollution and controlled the flow of spent wash which come out of collapsed tank, and voluntarily closed the distillery operation.

Based on the report (**Annexure-V)** of SRO MPCB Solapur, Regional Officer (RO), MPCB, Pune issued direction dated 01.12.2020 under Section 32 & 33 A of Water (Prevention & Control of Pollution) Act, 1974 and Section 31 A of Air (Prevention & Control of Pollution) Act, 1981 with direction for not to resume manufacturing activity till completion of restoration and remediation of affected land/soil etc and obtain prior permission of MPCB and DISH. The copy of the direction is attached as **Annexure- VI**.

The reply (dated 05.12.2020) to the direction of MPCB, received from the industry is attached as **Annexure - VII**. The industry has submitted various actions taken by the industry after the incident and provided Action Plan for the contaminated soil collection and remediation. MPCB official visited the industry on 11.12.2020 for the verification of action taken and action plan submitted by the industry in compliance of the direction issued. The verification report of the MPCB dated 11.12.2020 is provided at **Annexure -VIII.**

3.1.2 DIRECTORATE OF INDUSTRIAL SAFETY & HEALTH (DISH)

Dy Director, Directorate of Industrial Safety & Health (DISH) visited the site on 22.11.2020 and Report of the DISH is attached as **Annexure- IX (IX-A & IX-B).** DISH issued Show Cause Notice on 10.12.2020 (**Annexure-X)** due to violation of Section 7A (2) (a) of the Factories Act, 1948, Rules 65 (2) (b) (c) of the Maharashtra Factories, Rules 1963, Rules 65 (4) (a) (b) (C) of the Maharashtra Factories Rules, 1963 and Rule 65 (6) (ii) of the Maharashtra Factories Rules, 1963. Further, DISH has filed the case (STC No. 4383/2020, **Annexure-XI**) on 15.12.2020 in the court of Hon'ble Chief Judicial Magistrate, Solapur, against the Occupier of the factory due to violation of provisions of aforesaid Rules and Act as mentioned above.

3.1.3 POLICE DEPARTMENT

Mohol Police carried out inspection of the site on 22.11.2020 and prepared Panchnama**.** FIR filed in the Mohol Police station under the Sections-304 A & 420, Indian Penal Code 1860 on 26.12.2020 which is almost one month after the incident (21.11.2020). The reported date of occurrence of offence (incident) is mentioned as 21.12.2020 and information received at Police Station is reported as 26.12.2020 (15.00 Hrs). Panchnama & FIR are provided at **Annexure- XII.** Further, information regarding action based on FIR against industry even after death of two persons in the incident is awaited.

In the incident, two persons died and eight person injured. The Post Mortem (PM) of the deceased persons was carried out at Rural Hospital Mohol on 22.11.2020. As per Post Mortem report **(Annexure- XIII),** the deaths have been occurred due to head injury with intracranial Haemorrhage with dislocation of both the hip joints

3.1.4 COLLECTOR OFFICE

District Magistrate issued letter dated 31.12.2020 (**Annexure-XIV)** to the industry for the deposit of the amount to cover interim compensation with District Magistrate within month i.e. up to 17.01.2021, as per para 15 & 16 of the order dated 18.12.2020 of Hon'ble NGT. It is gathered that the industry has not deposited the amount to the collector office, instead paid compensation to the heirs in case of

deceased persons and to the injured persons. It is informed that legal adviser to District Administration has checked and verified compensation given to injured person & deceased person.

4.0 CAUSES OF FAILURE AND PERSONS AND AUTHORITIES RESPONSIBLE THEREFOR

As per the information provided by the industry, the distillery was not in operation since February, 2018 due to non-availability of molasses from their integrated sugar unit and drought conditions. As per the MPCB records and the Police Department, the distillery resumed its operation w.e.f. 02.11.2020 and it is observed that the bio-digester was not in operation from 2.8 years (33.6 months). The bio-digester was filled with spent wash of approximately 5,780 m^3 (57.8 lakh litres, i.e., approximately 60% of the volumetric capacity of bio-digester) since closure of the distillery unit in February 2018. After restarting of the plant in November, 2020 fresh spent wash feeding was started to the already existing 57.8 lakh litres of spent wash in the bio-digester.

4.1 CAUSES OF FAILURE OF BIO-DIGESTER

Based on examination of the documents submitted by the industry, discussions with committee members and inspection reports of DISH, Maharashtra; the probable causes of failure of bio-digester tank are outlined below:

i. It was a structural failure of bio-digester tank which was caused due to shearing off the welded bottom plate of the bio-digester tank resulting into falling of upper portion of tank on the ground.

ii. The failure of welded bottom plate attributed to defects in welds and inadequate strength of welded bottom plate.

iii. The corrosion caused weakening in the welded bottom plate due to continuous load of spent wash, which is acidic nature, i.e., reported pH of 3.8 – 4.2. Without proper operation & maintenance, the acidic pH of spent wash might have aggravated the corrosion of the bottom plate of the welded portion and resulted in structural collapse of the bio-digester. The soil

samples were collected at surface level & at 20 cm depth from different locations covering the entire impacted area due to the accident. It reveals that the pH of soil samples was reported to be slightly lesser pH value from the reference/background soil sample, thus not having any considerable impact due to accident.

iv. It is observed that the bio-digester was not examined and maintained before the restart of the plant as per the provisions of Rule 65 (2) (b) & (c) of the MFR, 1963, Rule 65 (4) (a) (b) (c) of the MFR, 1963 and Section 7A (2) (a) of the Factories Act, 1948. Therefore, the negligence towards not examining the strength of bio-digester before restarting the plant could be one of the causes of failure. The continuous load of 57.8 lakh litres of spent wash for a long period of 33.6 months could have deteriorated the strength of bio-digester material. This might have resulted into the weakening of the bottom part of the bio-digester leading to its breakage. This could also be one of the reasons for the structural failure of bio-digester. The hydraulic or ultrasonic tests are useful to check the structural integrity of the pressure vessel. The probable leakage points can also be found by conducting these tests.

v. The DISH, Maharashtra officials inspected the industry on 23.08.2019 and recommended to carry out hydraulic test before restarting the bio-digester. The inspection report of DISH officials is attached as **Annexure– XV**. It is gathered from the officials of DISH that the occupier is responsible to approach the competent person for verification/tests as per provision of Rule 65 (4) (a) (b) (c) of the MFR, 1963. The DISH, Maharashtra has published the list of approved competent persons[1] to carry-out verification/tests as per the said provision of the Rules.

vi. The DISH, Maharashtra has published a list of Major Accident Hazard[2] (MAH) industries for the state Maharashtra. As per list given at s. no. 204, the said

[1] https://mahadish.in/media/front/images/CP_ENG.pdf

[2] https://mahakamgar.maharashtra.gov.in/writereaddata/Portal/Images/pdf/List_of_MAH_Factories_18122018.pdf

industry has been listed as a MAH, as the said industry is engaged in production of ethanol @ 149 MT.

vii. The DISH, Maharashtra officials inspected the industry on 23.09.2019 and it was observed that the HAZOP study was not carried out by the industry to identify and evaluate the hazards associated with the plant operations. DISH, Maharashtra has recommended carrying out HAZOP study and also to appoint a safety officer. However, the occupier has not carried-out HAZOP study as per the recommendations of DISH, Maharashtra.

viii. The safety audit for the industry was carried out by M/s Samartha Enterprises, Solapur, in April 2018. As per the provision of Rule 10 (6) of The Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules 1989, the occupier shall update the safety audit report once a year by conducting a fresh safety audit and forward a copy of it with his comments thereon within 30 days to the concerned Authority, i.e., Chief Inspector of Factories appointed under the Factories Act, 1948. It is observed that the safety audit was carried out two and half years before the accident and the industry didn't carried-out fresh safety audit during 2020. Therefore, the failure to conduct the safety audit in time could also be attributed to one of the reasons for the structural failure of bio-digester.

ix. The bio-digester was manufactured and supplied by M/s Ecoboard Industries Limited, Pune. As per the information provided by supplier, attached as **Annexure- XVI**, the life of bio-digester was around 15 years, provided that proper maintenance is done on regular basis. It has also been mentioned that the plate thickness of digester shall be reduced due to the acidic or alkaline characteristics of the spent wash. As mentioned earlier, the spent wash was acidic in nature (pH 3.8 – 4.2) and was stored idle in the bio-digester for 33.6 months, due to which, the life of bio-digester was likely to be reduced significantly.

4.2 CONTRAVENTIONS, PERSONS AND AUTHORITY RESPONSIBLE THEREFOR

Based on examination of the documents submitted by the industry, discussions with the members of the expert committee and inspection reports of DISH, Maharashtra; contravention of the provision(s) of the Factories Act, 1948 and Maharashtra Factories Rules, 1963 are outlined below:

I. As per Rule 65 (1) (d) of the Maharashtra Factories Rule (MFR), 1963, the bio-digester is the pressure vessel.

II. As per provision of Rule 65 (2) (b) & (c) of the MFR, 1963; safety measures for pressure plant and vessels operated under pressure over atmospheric pressure, every pressure plant or pressure vessel used in any factory shall be – properly designed on sound engineering practice; of sound construction and material and of adequate strength and shall be free from any defect.

The bio-digester tank was not of sound construction and material having adequate strength and free from defects or not properly maintained in a safe working condition in accordance with the provisions of Rule 65 (2) (b) & (c) of the MFR, 1963. The occupier was responsible for the compliance with Rule 65 (2) (b) & (c) of the MFR, 1963.

III. As per provision of Rule 65 (4) (a) (b) (c) of the MFR, 1963, the bio-digester should be examined by the competent authority as below:

a) Externally once in every period of six months;
b) Internally, once in every period of twelve months, and
c) Hydraulic test once in a period of four years.

The bio-digester tank was not thoroughly examined by the competent person periodically in accordance with the Rule 65 (4) (a, b & c) of the MFR, 1963. The occupier was responsible for the compliance with the Rule 65 (4) (a, b, & c) of the MFR, 1963.

As per Rule 65 (1) of the MFR, 1963; 'competent person' means person who is, in the opinion of the Chief Inspector capable by virtue of his qualifications, training and experience of conducting a thorough examination and pressure tests, as required, on a pressure vessel or plant and of making a full report on

its condition; DISH, Maharashtra has published a list of competent persons for carrying out the examination of pressure plant and vessels operated under pressure over atmospheric pressure.

IV. Additionally, as per Rule 65 (6) (ii) of the MFR, 1963; the pressure vessel which has been previously used or has remained isolated or idle for a period exceeding 6 months or which has undergone repairs or alternations shall be used in a factory unless it is examined and tested by a competent person.

The bio-digester, which was idle for the period exceeding 06 months, was not examined and tested by the competent person before taking it into use after idle period in accordance with Rule 65 (6) (ii) of the MFR, 1963. The occupier was responsible for the compliance with Rule 65 (6) (ii) of the MFR, 1963.

V. As per the provision of Section 7A (2) (a) of the Factories Act, 1948, every occupier shall ensure as far as reasonably practicable, the health, safety and welfare of all workers while they are at work in the factory. It shall include the provision of maintenance of plant and system of work in the factory that are safe and without risk to health.

Bio-digester was not properly maintained in safe working condition and without risks to the safety of workers in accordance with the Section 7A (2) (a) of the Factories Act, 1948. The occupier was responsible for the compliance of the section 7A (2) (a) of the Factories Act, 1948.

5.0 EXTENT OF DAMAGE TO LIFE, HUMAN AND NON-HUMAN; PUBLIC HEALTH AND ENVIRONMENT – INCLUDING, WATER, SOIL, AIR

5.1 EXTENT OF DAMAGE TO LIFE, HUMAN AND NON-HUMAN; PUBLIC HEALTH

Due to accident of collapse of Bio-digester tank which resulted into spillage of spent wash on 21.11.2020 at the industry, two people lost their life and eight got injured. There is no loss of livestock's and also public outside the industry premises, as per

the information provided by District Administration. Only, industry's property i.e. bio-digester tank and nearby units such as de-gassing pond, lamella clarifier have been damaged.

The information of deceased and injured persons in tabular form provided by District Administration, Solapur where details including name of person, age, salary, education, no of days of hospitalization, nature of injury etc. are given as **Annexure-XVII.**

All the injured were admitted to Siddheshwar Hospital, Solapur which were discharged from hospital after stay at Hospital for 3 days except one person who stayed for 5 days. The medical expenses of Rs. 1,63,467/- paid by the industry for the treatment of affected 8 workers.

5.2 EXTENT OF DAMAGE TO ENVIRONMENT – INCLUDING, WATER, SOIL, AIR

The committee submitted its Interim Report on **"Extent of Damage to Environment and Steps to be taken for Restitution of Damaged Environment"** to Hon'ble NGT, PB through the nodal agency i.e. MPCB on 28.07.2021. The copy of the Interim Report of the committee is given at **Annexure-II.** There is no damage to surface water and air due to incident except soil and therefore soil sampling was carried out during the committee visit on 09.02.2021.

Brief extract of interim report on extent of damage to environment and steps to be taken for restitution of damaged environment is given below:

Soil samples from 08 different locations covering the entire impacted area due to the accident and also from one area not having any impact due to accident as reference/background soil sample were collected. The soil samples were collected at various depths ranging from the surface level, at 20 cm and at 40 cm respectively. The collected soil samples were analysed for parameters viz. pH, electrical conductivity, organic carbon, available nitrogen, available phosphorous, available potassium, available sulphur, sodium absorption ratio and cation exchange capacity so as assess residual impact (after scrapping of 10 cm top soil by the industry) on soil quality due to spillage of spent wash. Analysis results of 8 soil samples taken from the

spent wash spilled affected areas and the reference soil samples taken from non-impacted area reveals that, except pH and CEC, all the measured parameters (viz. electrical conductivity, organic carbon, available nitrogen, phosphorous, potassium, sulphur and sodium absorption ratio) have higher concentration in the spent wash spilled affected area when compared with the reference soil samples collected at surface level and at 20 cm and 40 cm depths. It may, therefore, be inferred that the affected spent wash spilled area still has impact of spent wash despite excavation of 10 cm soil after the spill. The concentration of such parameters was found to be significantly high at soil sampling locations S3, S4, S5 and S8 [viz. opp. distillery gate (North-eastern side of bio-digester), Southern side of bio-digester, Bitale Mohol Road, Near Kaccha Pit (Southern side of bio-digester) and downstream of compost yard where bund was constructed].

6.0 STEPS FOR COMPENSATION TO VICTIMS AND RESTITUTION OF DAMAGED PROPERTY AND ENVIRONMENT, INCLUDING THE LAND, SOIL, GROUNDWATER AND SURFACE WATER, AND THE COST INVOLVED;

6.1 COMPENSATION PAID TO INJURED AND DECEASED PERSONS

6.1.1 COMPENSATION PAID TO INJURED PERSONS

The industry has paid compensation of Rs.2,75,000/- each to the injured persons. In total, Rs. 22,00,000 paid to the injured persons. The medical expenses (medicine & hospital charges) of have been paid by the industry for the treatment of affected 8 workers. The details of compensation and medical expenses paid by the industry to the injured persons are depicted in following **Table-1 & 2** respectively.

TABLE:1 COMPENSATION PAID BY THE INDUSTRY TO THE INJURED PERSONS

S. No.	Name Injured Person(s)	Date	Amount	Total Amount
1	Mr. Sajjan Balu Jogadand	09/01/2021	2,50,000/-	2,75,000/-
		13/01/2021	25000/-	
2	Mr. Mangesh Namdev Pachpund	09/01/2021	2,50,000/-	2,75,000/-
		13/01/2021	25000/-	
3	Mr. Mahesh dilip Bodake	09/01/2021	2,50,000/-	2,75,000/-

		13/01/2021	25000/-	
4	Mr. Kalyan Kisan Gurav	09/01/2021	2,50,000/-	2,75,000/-
		13/01/2021	25000/-	
5	Mr. Permashwar Madhukar Thite	09/01/2021	2,50,000/-	2,75,000/-
		13/01/2021	25000/-	
6	Mr. Raju Dattatray Gaikwad	09/01/2021	2,50,000/-	2,75,000/-
		13/01/2021	25000/-	
7	Mr. Ravendra Gajendra Kakade	09/01/2021	2,50,000/-	2,75,000/-
		13/01/2021	25000/-	
8	Mr. Sanjay Bajirao Pache	09/01/2021	2,50,000/-	2,75,000/-
		13/01/2021	25000/-	

Table-2: Details of Medical expenses paid by the industry towards Injured person

S. No.	**Name Person**	**Medical Charges**	**Hospital Charges**	**Total Medical Exp**
1	Mr. Sajjan Balu Jogadand	1762/-	10590/-	12,352/-
2	Mr.Mangesh Namdev Pachpund	23439/-	16750/-	40,189/-
3	Mr. Mahesh dilip Bodake	1971/-	15020/-	16,991/-
4	Mr. Kalyan Kisan Gurav	1661/-	11720/-	13,381/-
5	Mr.Permashwar Madhukar Thite	1959/-	11060/-	13,019/-
6	Mr. Raju Dattatray Gaikwad	3344/-	17420/-	20,764/-
7	Mr. Ravendra Gajendra Kakade	6190/-	32000/-	38,190/-
8	Mr. Sanjay Bajirao Pache	2051/-	6530/-	8,581/-
Total Amount		**42377/-**	**1,21,090/-**	**1,63,467/-**

The injury to the injured persons is of type minor injury, as per information provided by District Administration (Refer **Annexure-XVII**). Further, Medical Certificate for seven injured persons excluding medical certificate of Mr. Mangesh Namdev Pachpund, are provided by Medical Superintendent, Rural Hospital, Mohol. As per Medical certificates, these injured persons are physically fit. The Medical Certificate are provided at **Annexure- XVIII.**

6.1.2 INTERIM COMPENSATION TO THE DECEASED PERSONS

The industry has paid compensation Rs, 15,00,000/- to the kin of each deceased persons. The details of compensation paid to the deceased person as depicted in the **Table-3**.

Table-3: INTERIM COMPENSATION PAID BY INDUSTRY TO DECEASED PERSONS

S. No.	Name Deceased Person(s)	Date(s)	Amount	Total Amount
1	Mr. Jotiram dada Vagare	03/12/2020	10,00,000/-	15,00,000/-
		09/01/2021	5,00,000/-	
2	Mr. Suresh Ankush Chavan	03/12/2020	10,00.000/-	15,00,000/-
		09/01/2021	5,00,000/-	

It is submitted by the industry in the Hon'ble NGT on hearing on 18.12.2020 that industry has given employment to the legal heir of deceased worker Shri Jyotiram Vagare in the factory.

6.2 COMPENSATION ASSESSMENT BY THE COMMITTEE FOR THE DECEASED PERSON

The person lost their lives due to the unfortunate incident on 21.11.2020 in the midnight hrs due to collapse of bio-digester tank which resulted in to flow of spent wash. The persons sustained injuries and succumbed to the injuries not on account of their act of neglect or while discharging their duties came in contact with machinery or the chemicals but died due to act of negligence towards maintenance of bio-digester.

As per of order of Hon'ble NGT in O.A. No. 85/2020 (Earlier O.A.No.22/2020 [WZ)] (Aryavart Foundation through its President v/s Yashashvi Rasayan Pvt. Ltd & Anr) reads as: "…*32. In view of frequent accidents resulting in deaths and injuries, the Chief Secretaries of all the States/UTs may evolve a mechanism to ensure that the companies dealing with hazardous substance must forthwith pay compensation for deaths and injuries to the victims at least as per Workmen Compensation Act, 1923 wherever applicable or the principle of restitution laid down in Sarla Verma (supra), National Insurance Company Ltd. v. Pranay Sethi, (2017) 16 SCC 680 to the victims either directly or through the District Magistrate."*

Accordingly, the committee referred following Hon'ble Supreme Court Cases for the different components in assessment of compensation:

- Hon'ble Supreme Court of India, Sarla Verma & Ors vs Delhi Transport Corp.& Anr on **15 April, 2009**, Author: R. V. Raveendran, J Bench: R.V. Raveendran, J Lokeshwar Singh Panta J, CIVIL APPELLATE JURISDICTION CIVIL APPEAL NO 3483 OF 2008(Arising out of SLP [C] No.8648 of 2007

- Supreme Court of India Amrit Bhanu Shali & Ors vs National Insurance Co. Ltd. & Ors on **4 April, 2012** Author: J. Bench: G.S. Singhvi, Sudhansu Jyoti Mukhopadhaya REPORTABLE IN THE SUPREME COURT OF INDIA CIVIL APPELLATE JURISDICTION CIVIL APPEAL NO. 3397 OF 2012 (ARISING OUT OF SLP(C) NO.27751 OF 2011)
- Hon'ble Supreme Court of India, National Insurance Co. Ltd vs Pranay Sethi **on 31 October, 2017**, Author: M . Dipak CJI, Bench- .CJI.(Dipak Misra) J. (A.K. Sikri) J. (A.M. Khanwilkar) J. (Dr. D.Y. Chandrachud) J. (Ashok Bhushan) New Delhi; , CIVIL APPELALTE JURISDICTION SPECIAL LEAVE PETITION (CIVIL) NO. 25590 OF 2014 with other Civil Appeals & Special Leave Petitions
- Hon'ble Supreme Court of India, Sunita Tokas vs New Inda Insurance Co. Ltd. **on 16 August, 2019** Author: Hon'Ble Ms. Malhotra,J Bench: Hon'Ble Ms. Malhotra J, Sanjiv Khanna, J, CIVIL APPELLATE JURISDICTION, CIVIL APPEAL NO. 6339 OF 2019(Arising out of SLP (Civil) No. 2859 of 2018)

- *As per para 5 of Judgement in case- Hon'ble Supreme Court of India, Sunita Tokas vs New Inda Insurance Co. Ltd. on 16 August, 2019 Author: Hon'Ble Ms. Malhotra,J Bench: Hon'Ble Ms. Malhotra J, Sanjiv Khanna, J, CIVIL APPELLATE JURISDICTION, CIVIL APPEAL NO. 6339 OF 2019(Arising out of SLP (Civil) No. 2859 of 2018)*

  .....5. In light of the aforesaid discussion, the compensation awarded to the Appellants is being enhanced as follows:

Income	*:*	*12,000/ PM*

Future Prospects	*:*	*4,800/ (i.e. 40% of the income)*
Deduction towards personal expenses	*:*	*50%*
Total income	*:*	*8,400/ (i.e. 50% of12,000 + 4,800)*
Multiplier	*:*	*18*
Loss of future income	*:*	*18,14,400/ (i.e.8,400 x 12 x 18)*
Loss of love and affection	*:*	*Rs. 2,00,000/*
Loss of estate and funeral expenses	*:*	*Rs. 50,000/*
Total		*Rs. 20,64,400/*

- The factors considered for assessment of compensation in the present case is described as below;

i. **Monthly salary/Income of the deceased person**

Permanent employee - as per the information provided by District Administration/Industry and Daily wager/helper - monthly salary of daily wage person as per minimum daily wage/monthly wages as per general order issued by office of Labour Commissioner, Mumbai, Govt of Maharashtra.

ii. Addition to Income for Future prospectus

We referred following paragraphs of National Insurance Co. Ltd vs Pranay Sethi on 31 October, 2017 IN THE SUPREME COURT OF INDIA, CIVIL APPELALTE JURISDICTION SPECIAL LEAVE PETITION (CIVIL) NO. 25590 OF 2014 National Insurance Company Limited Petitioner(s) Versus Pranay Sethi and Ors. Respondent(s).

61. In view of the aforesaid analysis, we proceed to record our conclusions:-

(i) The two-Judge Bench in Santosh Devi should have been well advised to refer the matter to a larger Bench as it was taking a different view than what has been stated in Sarla Verma, a judgment by a coordinate Bench. It is because a coordinate Bench of the same strength cannot take a contrary view than what has been held by another coordinate Bench.

(ii) As Rajesh has not taken note of the decision in Reshma Kumari, which was delivered at earlier point of time, the decision in Rajesh is not a binding precedent.

(iii) While determining the income, ***an addition of 50% of actual salary to the income of the deceased towards future prospects, where the deceased had a permanent job and was below the age of 40 years, should be made. The addition should be 30%, if the age of the deceased was between 40 to 50 years. In case the deceased was between the age of 50 to 60 years, the addition should be 15%. Actual salary should be read as actual salary less tax.***

(iv) In case the deceased was self-employed or on a fixed salary, an addition of 40% of the established income should be the warrant where the deceased was below the age of 40 years. An addition of 25% where the deceased was between the age of 40 to 50 years and 10% where the deceased was between the age of 50 to 60 years should be regarded as the necessary method of computation. The established income means the income minus the tax component.

(v) For determination of the multiplicand, the deduction for personal and living expenses, the tribunals and the courts shall be guided by paragraphs 30 to 32 of Sarla Verma which we have reproduced hereinbefore.

(vi) The selection of multiplier shall be as indicated in the Table in Sarla Verma read with paragraph 42 of that judgment.

iii. **Deduction for personal and living expense**

The committee has considered following criteria referring the judgement order of *Sarla Verma & Ors Vs. Delhi Transport Corporation & Anr.*, Para 14, "*Having considered several subsequent decisions of this court, we are of the view that where the deceased was married, the deduction towards personal and living expenses of the deceased, should be one-third (1/3rd) where the number of dependent family members is 2 to 3, one-fourth (1/4 th) where the number of dependant family members is 4 to 6, and one-fifth (1/5 th) where the number of dependant family members exceed six"* and para15 *"Where the deceased was a bachelor and the claimants are the parents, the deduction follows a different principle. In regard to bachelors, normally, 50%*

is deducted as personal and living expenses, because it is assumed that a bachelor would tend to spend more on himself.....".

iv. **Multiplier**

Multiplier considered as per para 44 of Judgment in the case- Hon'ble Supreme Court of India, National Insurance Co. Ltd vs Pranay Sethi on 31 October, 2017, Author: M . Dipak CJI, Bench- .CJI.(Dipak Misra) J. (A.K. Sikri) J. (A.M. Khanwilkar) J. (Dr. D.Y. Chandrachud) J. (Ashok Bhushan) New Delhi; , CIVIL APPELALTE JURISDICTION SPECIAL LEAVE PETITION (CIVIL) NO. 25590 OF 2014 with other Civil Appeals & Special Leave Petitions.

44. As far as the multiplier is concerned, the claims tribunal and the Courts shall be guided by Step 2 that finds place in paragraph 19 of Sarla Verma read with paragraph 42 of the said judgment. For the sake of completeness, paragraph 42 is extracted below:-

42. We therefore hold that the multiplier to be used should be as mentioned in Column (4) of the table above (prepared by applying Susamma Thomas, Trilok Chandra and Charlie), which starts with an operative multiplier of 18 (for the age groups of 15 to 20 and 21 to 25 years), reduced by one unit for every five years, that is M-17 for 26 to 30 years, M- 16 for 31 to 35 years, M-15 for 36 to 40 years, M-14 for 41 to 45 years, and M-13 for 46 to 50 years, then reduced by two units for every five years, that is, M-11 for 51 to 55 years, M-9 for 56 to 60 years, M-7 for 61 to 65 years and M-5 for 66 to 70 years.

v. Loss of love & affection and loss of Estate & Funeral Expenses-

The committee considered the para 5 of latest judgement in case Sunita Tokas vs New India Insurance Co. Ltd. on 16 August, 2019 out of four cases for the Loss of love & affection Rs.2,00,000/- & loss of Estate & funeral Expenses- Rs. 50,000/-

6.2.1 ASSESSMENT OF COMPENSATION

(Income per month (considering the average daily wage rates/monthly rates applicable in the area as per general order of Office of Labour Commissioner, Govt of Maharashtra, or income/salary per month whichever is higher) + Income for Future prospectus – Deduction for personal and living expense) x 12 months = Yearly compensation x Multiplier = Loss of Future Income + loss of love & affection+ Loss of estate & funeral expenses= Total Compensation

Considering the above methodology, the committee, assessed compensation for the deceased person are provided as **Annexure–XIX**. The compensation paid to the deceased person by the industry, compensation as per assessment of committee and additional compensation to be are tabulated in following **Table-4.**

Table-4: DETAILS OF COMPENSATION PAID BY THE INDUSTRY, ASSESSED BY THE COMMITTEE & TO BE PAID TO DECEASED PERSONS

Sr. No	Name Deceased Person(s)	Compensation paid by the industry	Compensation Assessed by the Committee	Compensation to be paid
1	Mr. Jotiram dada Vagare	15,00,000/-	18,51,600/-	3,51,500/-
2	Mr. Suresh Ankush Chavan	15,00,000/-	18,52,720/-	3,52,720/-

As per Hon'ble NGT order dated 18.12.2020 (para 15 & 16) in this matter, which are reproduced as below-

"15. ".....6. … we assess interim compensation for death to be 15 lacs each (taking into account multiplier of around 16 and loss of earning of about one lac a year, taking the minimum wage, apart from conventional sums), for grievous injury Rs. 5 lac per person, for other injuries of persons hospitalized Rs. 2.5 lac per person and for displacement at Rs. 25000/- per person."

16. Accordingly, the said scale needs to be applied to the present case. Final compensation may be suggested by the Committee, including for

restoration of environment. The industrial unit may deposit appropriate ....."

As mentioned above, Rs. 15 lakhs in case of death and Rs. 2.5 lakhs in case of other injury to be paid to deceased and injured (minor injury) persons. The industry has paid Rs, 15,00,000/- to the keen of each deceased persons and Rs. 2,75,000/- each to the injured persons (Rs.2,50,000/-+Rs.25,000/-). In total, Rs. 52, 00,000 (Rs. 52 lakhs) paid to the deceased and injured persons. The medical expenses (Medicine & hospital charges) for all injured persons have been given by the industry.

As per assessment of the Committee, the compensation amount is assessed more than the compensation paid to both the deceased persons by the industry, and therefore committee recommended to pay additional compensation to the deceased persons as shown in **Table-04**.

6.3 RESTITUTION OF ENVIRONMENT, INCLUDING THE LAND, SOIL, GROUNDWATER AND SURFACE WATER, AND THE COST INVOLVED;

Based on the analysis results of the soil samples collected from the entire spent wash impacted area due to accident and the area not having any impact due to accident, it is inferred that the affected spent wash spilled area still has impact of spent wash despite excavation of 10 cm soil from the surface. The concentration of parameters viz. electrical conductivity, organic carbon, available nitrogen, phosphorous, potassium, sulphur and sodium absorption ratio were found to be significantly higher at some soil sampling locations viz. opp. distillery gate (North-eastern side of bio-digester), Southern side of bio-digester, Bitale Mohol Road, Near Kaccha Pit (Southern side of bio-digester) and downstream of compost yard where bund was constructed.

Based on the analysis results of collected soils samples, the joint committee submitted its Interim Report titled as "Extent of Damage to Environment and Steps to be taken for Restitution of Damaged Environment" and recommended that; a

study should be conducted through reputed institute(s) to prepare Detailed Project Report (DPR) which may include delineation of impacted area due to spillage of spent wash including pits/drains/nallahs/bunds; detailed soil characteristics analysis/investigation with assessment of soil qualities in the affected areas and depth levels to which the same are affected; remediation of spent wash contaminated soil, if any; based on the receptors and pathways analysis; necessary arrangement to cover the spilled spent wash affected area during rain/monsoon or to contain the runoff by constructing suitable bunds/ periphery drains in the affected areas and preventing discharge of run-offs from the industry premises by channelizing & storing the collected run-offs to the storage lagoons and to be managed accordingly as per directions of MPCB. It was also recommended for ground water quality monitoring in and around the industry premises monitoring at least two times year (pre-monsoon and post-monsoon) for a minimum period of 2 to 3 years. Feasibility of utilization of remaining spent wash contaminated soil in environmentally sound manner i.e. for preparation of bio-compost also by ensuring the compliance of all parameters stipulated under FCO standards, as applicable.

Hon'ble NGT, PB, New Delhi, accepted the aforesaid Interim Report of the committee and passed order on 16.08.2021, directing for the study in terms of recommendations of the Committee be conducted by IIT Mumbai in coordination with other Institutions/individuals as may be considered appropriate and report of the IIT be submitted to the Chairman State PCB. Besides, various other directions have also been passed by the Hon'ble NGT vide order dated 16/8/2021 and copy of the same is given at **Annexure-III** for ready reference.

As per information provided by the industry to SRO, MPCB, Solapur through letter dated 03.08.2022 (**Annexure-XX**), the industry awarded Study work to IIT Bombay vide work order dated 01.11.2021 as directed by the Hon'ble NGT vide its order dated 16.08.2021. The industry has made payment of Rs. 46,12,896/- to IIT Bombay on 14.12.2021, of total study project cost Rs. 50,40,960/-. IIT team has carried out preliminary visit (on 15.09.2021) and carried out sampling of soil, water and spent

wash during three visits (09.01.2021, 23.02.2022 & 30.03.2022). It is informed that the report is under preparation.

7.0 REMEDIAL MEASURES TO PREVENT RECURRENCE OF THE ACCIDENT IN BIO-DIGESTER OF DISTILLERY INDUSTRY

The following are specific and general remedial measures to avoid such industrial accidents in future.

7.1 SPECIFIC REMEDIAL MEASURES

I. The bio-digester tank should be properly designed of sound construction and material with adequate strength and free from defects as per the provision of Rule 65 (2) (b) & (c) of the MFR, 1963 and the same shall be examined by the competent person[3] failing which DISH shall cancel the factory license of the occupier besides taking appropriate actions.

II. Appropriate Non-Destructive Testing (NDT) should be carried out to ensure that the welds are free from defects and there is no sign of excessive wear in the plate thickness of the tank as per the provision of Rule 65 (4) (a) (b) (c) of the MFR, 1963.

III. Adequate measures should be taken for corrosion monitoring and protection of bio-digester tank per the provision of Schedule XXI (14) of the MFR, 1963.

IV. As per provision of Rule 65 (4) (a) (b) (c) of the MFR, 1963, the bio-digester should be examined by the competent person externally once in every period of six months; internally, once in every period of twelve months, and hydraulic test once in a period of four years.

V. As per the provision of Rule 10 (6) of The Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules 1989; safety audit should be conducted once in every year and the report of the same should be forwarded to the concerned authority i.e. Chief Inspector of Factories appointed under the Factories Act, 1948.

[3] https://mahadish.in/media/front/images/CP_ENG.pdf

VI. Dyke area of sound construction should be provided to the large tanks (bio-digester), wherever possible, so that all contents of the tank, in case of partial or full rupture accident, can be enclosed in the dyke. Each dyke should have roads all around for access during emergency scenarios. In case such dykes are not possible, necessary arrangement shall be in place to contain spillages from such tanks and channelizing the same to a safe impervious storage facility within the plant premises.

VII. Risk Assessment study incorporating hazard identification and consequences analysis should be carried out. The study should include possible damage contours for fire, explosion and toxic scenarios in case of partial or full rupture of process equipment or storage tank or bio-digester including scenario of spillage/emission.

VIII. HAZOP study should also be carried out at biogas plant in order to get structured approach towards assessing the existence of hazards and its vulnerability.

IX. Critical analysis of failure of welds and material should be carried out at least once in every period of four years to find out the technical cause(s) of their failures with a view of taking the adequate measures for the removal of such causes(s).

X. As per the provision of Rule 100 of the MFR, 1963 (Persons defined to hold positions of supervision or employed in a confidential position); a safety officer should be appointed by the industry to look after safety precautions to be implemented all over the plant. The officer will also be responsible to acquire necessary approvals with respect to safety regulations and conduct mock drills periodically.

XI. On-site and off-site emergency plans should be prepared considering all the worst-case scenarios viz. fire hazard, explosions, gaseous (methane & hydrogen sulphide) leakages & confined spaces and mechanical, structural & electrical hazards, spillages/emissions, etc. including structural failure scenario.

7.2 REMEDIAL MEASURES TO PREVENT RECURRENCE W.R.T. OPERATIONAL PARAMETERS OF BIO-DIGESTER

Following remedial measures may be incorporated in distillery industry (bio-digester) to ensure the safe operation, optimization of process of bio-digester and also to prevent the re-occurrence of safety related incidents associated with environmental aspects.

I. Various process control measures presented in the bio-digester operation may also be incorporated in the flow sheet and process and instrumentation diagram (P&ID), which perhaps is the single most important document defining a continuous process of bio-digester. To the extent practicable, bio-digester to be shown on the P&ID in a manner which represents the physical configuration/layout of the bio-digester and associated network of pipelines.

II. The distillery industry (bio-digester) may ensure automatic process control in combination with on-line instrumentation. The automatic process control would provide a valuable tool for optimizing process performance of bio-digester at high COD loadings and also effectively reduce the involvement of operator and laboratory personnel.

III. In order to detect the gaseous leakages from bio-digester outlet/gas holder and to ensure safe operation and efficient monitoring & measurement of bio-digester process optimization/performance; it is required to install the following sensors fitted with alarm system.

   a) Installation of online methane sensor at appropriate location(s). Besides measuring methane leakages, a drop in methane concentration can indicate an overload in bio-digester.

   b) Installation of inline pH meter in the bio-digester at appropriate location(s). It is reported that pH is an important and frequently measured variable parameter in bio-digester, because the process performance is highly dependent of pH and it is an indicator of process malfunction.

IV. The bio-digester should be stabilized before start-up of distillery operation (at least 30 days prior) by addition of required organic sources (diluted molasses

or any carbon sources), active bio-culture and nutrients in order to ensure the process optimization and desired performance of bio-digester.

V. Measurement of concentration of Volatile Fatty Acids (VFA) at least 3 times per day during stabilization period and once daily during regular operation. High VFA concentration results decreased pH value causing microbial stress and ultimately leading to process failure. Thus, VFAs are one of the first indicators of anaerobic system performance deterioration and, therefore, the monitoring of VFA concentrations is very important for healthy operation and efficient performance of bio-digester.

VI. Spent wash being acidic in nature, FRP liner of bio-digester tank shall be periodically checked for fault/deterioration besides prior to shut down and start-up of bio-digester operation.

VII. With the number of industrial accidents being reported, the Chief Inspectorate of Factories of the State may compile a half yearly database of accidents and examine the shortfalls/causes which caused the accidents. Necessary measures against such shortfalls may be initiated from the Chief Inspectorate of Factories of the State from time to time. The compiled database should be disseminated in their website or public domain.

7.3 OTHER REMEDIAL MEASURES

I. The adequate periodical preventive maintenance programme should be formulated and implemented to maintain the bio-digester in good working condition.

II. Personal Protective Equipment (PPE) provides additional protection to personnel exposed to workplace hazards. The PPEs like safety glasses with side shield, helmets, safety shoes and boots, gloves, facemasks, aprons etc. should be provided to all personnel working in the operational area.

III. Naked flame, welding, hot surfaces or any other ignition source should not be permitted in process as well as storage area.

IV. Necessary fire fighting equipment shall be provided.

V. Proper signboards with do's and don'ts, emergency phone numbers, etc. should be installed at appropriate locations.

VI. Material Safety Data Sheet (MSDS) for raw materials, intermediates and products should be readily available and displayed at the entrance of the plant.

VII. Escape routes with easy access should be provided in case of emergency at strategic locations and signboard for the same should be displayed at the site.

VIII. Shut off and isolation valves in pipelines should be easily approachable in case of emergencies.

IX. The inspection and checking of fire-fighting facilities should be done periodically.

X. A wind direction pointer should be installed at storage site, so that in case of unforeseen circumstances. The same may help in emergency response measures w.r.t. upwind and downwind recipients depending on the wind direction.

XI. Pamphlets highlighting the hazardous chemicals in the plant and do's and don'ts before and during emergency should be circulated to the surrounding population. The pamphlets should be in vernacular language also.

XII. Training and Mock drills should be conducted periodically for all plant personnel and report of the same should be forwarded to the concerned authority i.e. Chief Inspector of Factories appointed under the Factories Act, 1948.

XIII. Onsite mock drill should be conducted once in six months and offsite mock drill should be conducted once in a year.

XIV. Disaster Management Plan (DMP) should be kept up-to-date and should incorporate the procedure to be adopted to tackle any major accident. The procedures and roles & responsibilities of key personnel should also be specified in the DMP.

8.0 CONCLUSIONS

i. Due to incident of collapse of Bio-digester tank which resulted into spillage of spent wash on 21.11.2020 at the industry, two people lost their life and eight got injured. About 6,500 m^3 of spent wash spilled due to collapse of bio-digester and spread on 6 acres land within the industry premises thereby contaminating the soil.

ii. The distillery was not in operation since February, 2018 due to non-availability of molasses from their integrated sugar unit and drought conditions. The distillery resumed its operation w.e.f. 02.11.2020 and bio-digester was not in operation from 2.8 years (33.6 months). The bio-digester was filled with spent wash of app. 5,780 m^3 (57. 8 lakh litres, i.e. app.60% of the volumetric capacity of bio-digester) since the closure of the distillery unit in February, 2018.

iii. The spent wash was acidic in nature (pH = 3.8 – 4.2) and was stored idle in the bio-digester for 33.6 months. The acidic nature of the spent wash could have corroded the bio-digester material leading to reduction of the plate thickness. Also, defective welds and inadequate strength of welded bottom plate attributed to the corrosion. Without proper operation & maintenance, the acidic pH of spent wash might have aggravated the corrosion of the bottom plate of the welded portion and resulted in structural collapse of the bio-digester.

iv. MPCB officials visited the incident site on 22.11.2020 and further, Regional Officer (RO), MPCB, Pune issued direction dated 01.12.2020 under Section 32 & 33 A of Water (Prevention & Control of Pollution) Act, 1974 and Section 31 A of Air (Prevention & Control of Pollution) Act, 1981 with direction for not to resume manufacturing activity till completion of restoration and remediation of affected land/soil etc. and obtain prior permission of MPCB and DISH. The industry submitted the reply to the direction of MPCB regarding various actions taken by the industry after the incident and provided Action Plan for the contaminated soil collection and remediation. MPCB official visited the

industry on 11.12.2020 for the verification of action taken and action plan submitted by the industry in compliance of the direction issued.

v. There was no damage to water and air due to incident except soil and therefore soil sampling & analysis was carried out during the committee visit on 09.02.2021.

vi. Based on the visit and analysis of the soil samples, the committee prepared its Interim Report on **"Extent of Damage to Environment and Steps to be taken for Restitution of Damaged Environment"** and submitted to Hon'ble NGT, Principle Bench, New Delhi through MPCB being Nodal Agency.

Based on the analysis results of the soil samples collected from the entire spent wash impacted area due to accident and the area not having any impact due to accident, it is inferred that the affected spent wash spilled area still has impact of spent wash despite excavation of 10 cm soil from the surface. The concentration of parameters viz. electrical conductivity, organic carbon, available nitrogen, phosphorous, potassium, sulphur and sodium absorption ratio were found to be significantly higher at some soil sampling locations viz. opp. distillery gate (North-eastern side of bio-digester), Southern side of bio-digester, Bitale Mohol Road, Near Kaccha Pit (Southern side of bio-digester) and downstream of compost yard where bund was constructed.

Based on the analysis results of collected soils samples, the joint committee recommended that a study should be conducted through reputed institute(s) to prepare Detailed Project Report (DPR) which may include delineation of impacted area due to spillage of spent wash including pits/drains/nallahs/bunds; detailed soil characteristics analysis/investigation with assessment of soil qualities in the affected areas and depth levels to which the same are affected; remediation of spent wash contaminated soil, if any; based on the receptors and pathways analysis; necessary arrangement to cover the spilled spent wash affected area during rain/monsoon or to contain

the runoff by constructing suitable bunds/ periphery drains in the affected areas and preventing discharge of run-offs from the industry premises by channelizing & storing the collected run-offs to the storage lagoons and to be managed accordingly as per directions of MPCB. It was also recommended for ground water quality monitoring in and around the industry premises monitoring at least two times year (pre-monsoon and post-monsoon) for a minimum period of 2 to 3 years. Feasibility of utilization of remaining spent wash contaminated soil in environmentally sound manner i.e. for preparation of bio-compost also by ensuring the compliance of all parameters stipulated under FCO standards, as applicable.

vii. Hon'ble NGT, PB, New Delhi, accepted the aforesaid Interim Report of the committee and passed order on 16.08.2021, directing for the study in terms of recommendations of the Committee be conducted by IIT Bombay, in coordination with other Institutions/individuals as may be considered appropriate and report of the IIT be submitted to the Chairman State PCB. Besides, various other directions have also been passed by the Hon'ble NGT vide order dated 16/8/2021 and copy of the same is given at Annexure-III for ready reference.

As per information provided by the industry to SRO, MPCB, Solapur through letter dated 03.08.2022 (**Annexure-XX**), the industry awarded Study work to IIT Mumbai vide work order dated 01.11.2021 as directed by the Hon'ble NGT vide its order dated 16.08.2021. The industry has made payment of Rs. 46,12,896/- to IIT Bombay on 14.12.2021, of total study project cost Rs. 50,40,960/-. IIT team has carried out preliminary visit (on 15.09.2021) and carried out sampling of soil, water and spent wash during three visits (09.01.2021, 23.02.2022 & 30.03.2022). It is informed that the report is under preparation.

viii. There was no loss of livestock's and also public outside the industry premises. Property of the industry i.e. bio-digester tank and nearby units such as de-gassing pond, lamella clarifier have been damaged.

ix. The persons sustained injuries and succumbed to the injuries not on account of their act of neglect or while discharging their duties came in contact with machinery or the chemicals but died due to act of negligence towards maintenance of bio-digester. All the injured were admitted to Siddheshwar Hospital, Solapur which were discharged from hospital after stay at Hospital for 3 days except one person who stayed for 5 days. The industry has paid Rs, 15,00,000/- towards compensation to the keen of each deceased persons and Rs. 2,75,000/- each to the injured persons (Rs.2,50,000/-+Rs.25,000/-). In total, Rs. 52, 00,000 (Rs. 52 lakhs) paid to the deceased and injured persons. The medical expenses (Medicine & hospital charges) for all injured persons have been given by the industry.

x. The committee assessed compensation to the deceased person refereeing order of Hon'ble NGT in O.A. No. 85/2020 (Earlier O.A.No.22/2020 [WZ)] (Aryavart Foundation through its President v/s Yashashvi Rasayan Pvt. Ltd &Anr) which read as: "…*32. In view of frequent accidents resulting in deaths and injuries, the Chief Secretaries of all the States/UTs may evolve a mechanism to ensure that the companies dealing with hazardous substance must forthwith pay compensation for deaths and injuries to the victims at least as per Workmen Compensation Act, 1923 wherever applicable or the principle of restitution laid down in Sarla Verma (supra), National Insurance Company Ltd. v. Pranay Sethi, (2017) 16 SCC 680 to the victims either directly or through the District Magistrate." And also,* various Committee Reports in such accident matters, by related Hon'ble Supreme Court Cases.

xi. As per assessment of the Committee, the compensation amount is assessed more than the compensation paid to both the deceased persons by the industry, and therefore committee recommended to pay additional compensation to the deceased persons as shown **Para 6.2.1 Table -4.**

xii. The industry has obtained Factory Licence and Approval Plan as per the provisions of Rule 4 (1) (a, b, c & d) of the MFR, 1963.

xiii. As per the provisions of Rule 65 (2) (b) & (c) of the MFR, 1963 bio-digester tank was not of sound construction and material having adequate strength and free from defects and properly maintained in a safe working condition. Hence, the occupier is non-complied with the provisions of Rule 65 (2) (b) & (c) of the MFR, 1963.

xiv. It is the responsibility of the occupier to approach the competent person to carry-out examination/tests of the bio-digester as per the provisions of Rule 65 (4) (a, b & c) of the MFR, 1963. It is observed that the industry didn't carried-out any such type of tests viz. Externally once in every period of six months; Internally, once in every period of twelve months, and Hydraulic test once in a period of four years as per the provisions of the aforesaid Rules of the MFR, 1963 before the restart of bio-digester. The conduct of any such test to examine the deterioration of the bio-digester material could have avoided the accident. The industry is accountable for its lackadaisical approach for not carrying out the mandatory tests.

xv. Additionally, as per Rule 65 (6) (ii) of the MFR, 1963; the pressure vessel which has been previously used or has remained isolated or idle for a period exceeding 6 months or which has undergone repairs or alternations shall be used in a factory unless it is examined and tested by a competent person. The bio-digester, which was idle for the period exceeding 06 months, was not examined and tested by the competent person before taking it into use after idle period in accordance with Rule 65 (6) (ii) of the MFR, 1963.

xvi. The industry neither carried out HAZOP study nor appointed a safety officer as recommended by the DISH, Maharashtra. The non-compliances of the occupier w.r.t. the provisions of Rule 65 (4) (a) (b) (c) of the MFR, 1963 and also for not carrying out HAZOP study could also be one of the reasons for the structural failure of bio-digester.

xvii. Bio-digester was not properly maintained in safe working condition and without risks to the safety of workers in accordance with the Section 7A (2) (a) of the Factories Act, 1948. The occupier was responsible for the compliance of the section 7A (2) (a) of the Factories Act, 1948.

xviii. As per the provision of Rule 10 (6) of The Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules 1989, the occupier didn't carry out fresh safety audit every year. It is observed that the safety audit was carried out two and half years before the accident and the industry didn't carried-out fresh safety audit during year 2020. Therefore, the failure to conduct the safety audit in time could also be one of the reasons for the structural failure of bio-digester.

xix. It is gathered from DISH, Maharashtra that as per Central Inspection System, 25 no. of industries have to be inspected per month per region by an official at the rank of Joint Director/Dy. Director/Asst. Director for the compliance verification w.r.t. provisions of the MFR, 1963 and the Factories Act, 1948. As per the information available, presently only one Dy. Director is looking after Solapur region for compliance verification w.r.t. provisions of aforesaid Act and Rules including compliance verification of MAH units. Hence, considering the no. of industries to be inspected with limited manpower and resources could also be one of the reasons to unable to identify defaulting and non-complying industry(s) and also unable to take effective preventive measures by timely intervention through issuance of appropriate directions.

xx. After the accident, DISH has filed the case (STC No. 4383/2020) on 15.12.2020 in the court of Hon'ble Chief Judicial Magistrate, Solapur, against the occupier of the factory for contravening the provisions of the Section 7 A (2) (a) of Factories Act, 1948 and Rule 65 (2) (b) (c) of MFR, 1963, Rule 65 (4) (a) (b) (c) of MFR, 1963 and Rule 65 (6) (ii) of MFR, 1963 respectively. The matter is pending before the CJM, Solapur.

9.0 RECCOMANDATIONS

i. The additional compensation amount to be paid has been assessed by the committee and given in **Para 6.2.1 (Table-4)** above which may be paid to the kin of deceased persons by the industry. The District Administration may consider the same and take necessary action.

ii. Actions against the industry for the various non-compliances should be expedited by respective departments.

iii. MPCB and DISH Maharashtra may consider implementing various remedial measures as given at **Para 7** above to prevent recurrence of accident in Bio-digested of Distillery industry.

iv. MPCB shall ensure that report of study work by IIT Bombay to be submitted by the industry as early as possible. Based on the study report of the IIT Bombay w.r.t. DPR preparation, as outlined in the interim of the committee filed to the Hon'ble NGT on 29/7/2021, MPCB may take necessary actions ensuring timely remediation of affected/contaminated sites, as applicable.

Till the aforesaid IIT study report is submitted and suggested remedial measures therein are implemented, MPCB shall ensure implementation of various suggested measures such as necessary arrangement to cover the spilled spent wash affected area during rain/monsoon or constructing suitable bunds/ periphery drains in the affected areas and channelizing & storing the collected run-offs to the storage lagoons; analysis of contained water in lagoons/guard pond; storage of the previously scrapped spent wash contaminated soil and the spent wash contaminated soil in an environmentally sound manner; and other measures as suggested in the aforesaid interim of the committee filed to the Hon'ble NGT on 29/7/2021.

v. MPCB shall monitor Ground water quality in and around the industry premises shall be monitored at least two times year (pre-monsoon and post-monsoon) for a minimum period of 2 to 3 years. The number of monitoring wells in and around the industry premises should be near as far as possible, at least 03 numbers of monitoring wells should be so selected.

The results may be presented to the committee so that necessary recommendation can be made by the committee ensuring that contaminated (monitored on the basis of Colour with other parameters) water does not affect other wells of public use. MPCB shall also ensure compliance of the other directions passed by the Hon’ble NGT vide order dated 16/8/2021.

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Annexure-I

Item No. 03 Court No. 1

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

Original Application No. 274/2020

News item published in the "Indian Express" dated 23.11.2020 entitled "Maharashtra: Two Killed, eight injured in methane gas leak in sugar factory"

Date of hearing: 18.12.2020

CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON
HON'BLE MR. JUSTICE SHEO KUMAR SINGH, JUDICIAL MEMBER
HON'BLE DR. SATYAWAN SINGH GARBYAL, EXPERT MEMBER
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER

Respondent(s): Mr. Raj Kumar, Advocate for CPCB
Mr. Mukesh Verma, Advocate for MPCB
Mr. R.B Mahabal, Advocate for R-5
Representative of DM, Solapur
Representative of Director, Industrial Safety and Health, Maharashtra

ORDER

1. Proceedings in this matter have been initiated on the basis of media report of deaths and injuries on account of methane gas leak in a sugar factory called Lokenete Bapurao Patil Agro Industries Ltd. in Mohol Taluka of Solapur District, Maharashtra on 21.11.2020.

2. Advance notice of proceeding was issued to the State PCB, CPCB, District Magistrate, Solapur, Maharashtra, Director, Industrial Safety and Health (DISH) and the industry in question. Brief reference may be made to the responses filed. The response filed by the State PCB on 16.12.2020 is that the incident took place on 21.11.2020. The State PCB issued order dated 01.12.2020 directing the unit to stop industrial activities till restoration and remediation of affected land/soil and obtaining of permission from the State PCB and the Industrial Safety. The unit submitted an action plan dated 05.12.2020. The State PCB

team visited the site on 11.12.2020 and found that spilled out spent wash had been collected from the nearby drain. Contaminated soil had been stored. The area was soaked by the nearby soil and bagasse. Approximately 6 Acres i.e. approximate 24282 sq/m area has been covered by the spent wash. Industry has scrapped of the contaminated soil, collected with the help of 3 excavators and this scrapped soil is transported to compost yard through tippers which will be utilized in composting process along with press mud and fly ash as filler material for making compost. Total scrapped soil is collected by 404 Tippers (approx. 4700 MT). Industry has done scrapping of contaminated soil from almost entire area where spent was spread. The contaminated soil is transported and stored to compost area industry having 705 acre concrete compost yard as per CREP norms. Concrete compost yard has sufficient space to store the scrapped contaminated soil. Spent Wash mixed with bagasse in bagasse yard has dried and incinerated in bagasse fired Boiler using as fuel.

3. The District Magistrate, Solapur has filed response on 16.12.2020 stating as follows:-

> ***"Due to heavy pressure and weight of spent wash inside the tank, bio-digester broke and fell on the ground, which resulted into spillage of 65 lakh litre spent wash in the premises. Due to heavy flow/flash flood of spent wash, 3 workers working in that area were thrown away with the stream of spent wash. Out of these workers one worker survived and other two workers flown with spent wash and collided with factory structures and sustained severe head injuries which resulted into death."***

4. It is further stated that the State PCB issued directions under the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981. The Director, Industrial Safety conducted enquiry and filed a case under the Factories Act, 1948.

Director, Industrial Safety and Health, Solapur has filed the case before the Honourable Chief Judicial Magistrate, Solapur, against the Occupier of the factory under the provision of Section 7-A (2)(a) of Factories Act, 1948 and under the Rule 65(2))b)(c), Rule 65 (4)(a)(b)(c), Rule 65(6)(ii) of Maharashtra Factories Rule, 1963. **The industry has paid compensation of Rs. 10,00,000/- each to the heirs of two deceased workers.** Also, legal heir of deceased worker Shri. Jyotiram Vagare has been given employment in the factory. **Also medical expenses of Rs. 1,87,470/- have been paid by factory management for the treatment of affected 8 workers.**

5. The industrial unit in its response filed on 17.12.2020 has mentioned as follows:-

> *"2. There are TWO independent units under the same title. They have different separate 'consent to operate' The 'Environmental Clearance' is required for Distillery unit only.*

Industry UNITs	***'Consent to Operate'***	***'Environmental Clearance'***
A. Sugar Factory & cogeneration	*Valid up to 31/7/2022*	***NOT APPLICABLE***
B. Distillery Unit	*31/8/2021*	*Issued on 19.05.2008*
PESO required	*Applicable for Ethanol storage up to 1810 KL*	*Applicable & obtained 31/12/2024*

ACCIDENT LOCATION

6. *These two industrial units, are adjacent to each other. Sugar Factory manufacturing sugar and power cogeneration plant. Distillery is manufacturing Rectified Spirit or Extra neutral Alcohol or Ethanol or Fusel Oil.* ***Accident did not happen in any of the operating independently. Distillery Unit.***

7. *Both have independent Effluent Treatment Plant (ETP) operating independently. Distillery unit uses the*

molasses as raw material, which is waste from the Sugar unit. In distillery unit, after entire manufacturing process is complete, rectified spirit or extra neutral Alcohol or Ethanol or Fusel oil is produced. Thereafter, Effluent (spent wash) is generated, which is waste.

5. *This Effluent (spent-wash), is sent to Distillery Unit Effluent Treatment Plant (ETP). This Treatment process consists of Bio-Digestor where high BOD/COD is reduced in anaerobic process to treat the Effluent (spent-wash). Methane Gas gets generated in this bio-digestor as a by-product; which is used as fuel in Boiler for generating steam.*

6. ***Accident happened in the ETP of Distillery Unit.*** *(i.e. breaking of welding-joint of the bottom shell of the tank).* ***It did not happen in the manufacturing process of Distillery or Ethanol. There was no accident or effect of it in the manufacturing plant of Sugar Factory OR Distillery Unit****.*

PESO LICENCE

7. ***PESO Certification is required for Ethanol storage*** *(Petroleum and Explosive Safety Organisation of India registration).* ***Distillery Manufacturing Unit requires and has that, for storage of 1810 kL of Class A products.***

8. ***PESO license is not required for Methane Gas*** *production and storage, from the Effluent (spent wash) or storage of it.*

9. ***Effluent (spent-wash)*** *is not classified as Hazardous Waste or Hazardous Chemical. It does not come under any of these regulations.*

COMPENSATION PAID TO DECEASED

10. *Unfortunately, two workmen/employees died within the ETP area near & due to bio-digestor wreckage, due to physical injury; and NOT due to Methane Gas leakage, or suffocation from that or explosion or fire. Heirs of both are already compensated as per the* ***Factories Act 1948*** *and* ***Workmen Compensation Act 1923****.*

11. *Employment was offered to hears of both. One of them has already accepted it and other one may confirm the acceptance in a week.*

COMPENSATION PAID TO INJURED

12. *There is no partial or full disability to any of the workmen. As such nothing was required to be paid on these grounds.*

MEDICAL EXPENSES

13. *Entire medical expenses, bills for ambulance, hospitalization and medication were fully paid by the Industry. All of them have been already discharged. They are on fully paid medical leave for 15 days.*

SAFETY MEASURES - FOR FUTURE

14. *Accident happened when Methane Gas generation was not even started. That stage would have come 15 days later.* ***The capacity of the tank was 9600m³ whereas the Effluent (spent-wash) in it was about 6500 m³. So, it was not even full to its capacity. Top manhole covers also were open. There was no gas pressure inside. Even when there is Methane Gas generation, the pressure is +0.03 kg/cm². As such this is not high pressure enough to rupture the tank.***

15. ***The bio-gas digestor was standing over a decade. It was painted from outside with silver-paint to reflect heat. It is coated from inside with epoxy-paint to withstand the corrosion. It was inspected periodically once in two years. Last year it was not even operated or sued, as plant was closed. The manufacturer of the tank was experienced company and has 300+ installations in India.***

16. *All these good operating practices shall be continued even in future. Failure of the tank shall be studied in depth with a view to avoid it.*

FUTURE PRECAUTION - NEW BIO-DIGESTOR

17. *The new bio-digestor shall be provided with the 2 m wide concrete paving all around and the drains leading to storage pit, so as to arrest the accidental leakage then and there.*

18. *New bio-digestor has been already ordered for total of Rs.3 Crore (workmanship, bought out items and basic material cost, all put together). The welding and epoxy-coating of the tank will be done with extra care*

POLLUTION CAUSED & REMEDIED

19. *The mishap happened in the ETP area, and not the industry OR manufacturing plant area. Effluent did not enter the adjacent areas, but spread mainly within the factory premises in areas shown on Map i.e. bagasse yeard, compost yard, cane yard and garden.*

20. *There was no air pollution of any of the criteria pollutant. There was no surface or ground water pollution, as Effluent (spent-wash) was recollected immediately.*

21. ***Out of total spillage of about 6500m³, 77% or about 5000 m³ of Effluent (spent-wash) was recollected in liquid form as it is.***

22. *Soil contaminated and soaked in it has been retrieved to the tune of 5000 Mt. It has been already transported to Concrete paved Compost Yard of 7.5 Acre, where it would be treated in wind-rows. The soil shall be tested and used within the garden area of about 6 Acres within the factory premises.*

DAMAGE TO ENVIRONMENT & REMEDIATION

23. *There was no damage to flora or faun, animals or birds.*

SUBMISSIONS ON AFFIDAVIT BY MPCB

24. Industry has seen the Visit Report of MPCB dated 22.11.2020, directions of MPCB dated 01.12.2020 and the Affidavit filed before this Hon'ble Tribunal on 16.12.2020. *MPCB officials have visited the site thrice to see what had happened, and to see the action taken by the industry. Their officials also had visited to inspect the liquid effluent retrieved by the Industry from the adjacent dry-nallah.*

25. *The Affidavit by MPCB need not be contradicted. There findings and directions shall be implemented. MPCB has already given directions u/s.33A dated 01.12.2020 and the same has been already complied with.*

26. The Distillery Unit has been voluntarily closed-down from 21.12.2020. *MPCB shall be shown the alternative ETP arrangement being done to treat the Effluent (spent-wash) from the Distillery Unit. It would be now be directly treated in the Compost Yard with larger area and sustainable loading, using additional press-mud and fly-ash. The* ***Action Taken Report*** *has been submitted to MPCB. Industry shall invite the MPCB Officials for showing the progress and installation of new bio-digestor.*

27. *Only as per the approval of the MPCB and conditions that shall be applied, approved and incorporated in the existing 'Consent to Operate', the further Effluent (spent-wash) treatment shall be done. It shall be measurable, verifiable and shall be documented by us, in terms of quantity, volume and photographs.*

SUBMISSIONS ON AFFIDAVIT BY DISH

28. *The Affidavit of DISH also is not contradicted on the environmental or pollution grounds. Industry shall submit their jurisdiction under Factories Act 1948 and shall follow their directions.*

29. There are no adverse findings as regards to damage to environment, pollution caused OR relief, compensation and remediation to be done.

30. Industry states that whatever corrective action was to be done to remediate the pollution and its effects on environment (mainly soaking the soil with Effluent (spent-

> ***wash), has been done. That would be continued and completed within a month.”***

8. We have heard learned counsel for the State PCB, CPCB and representative of District Magistrate, Solapur and learned counsel for the industrial unit.

9. From the material on record, it is clear that the unit is engaged in producing and dealing with the methane and ethanol which are covered by the Manufacture, storage and Import of Hazardous Chemicals Rules, 1989. The Rules require the occupier of the industrial activity *inter-alia* to prepare an on-site emergency plan which should include mock-drill every six months. There is also requirement to prepare an off-site emergency plan by the Authority. **It is not shown by any of the parties whether this aspect has been looked into and whether there is compliance of this mandate**. Learned counsel for the industrial unit submitted that the location where the accident took place is outside the manufacturing area. However, definition of “site”, under Rule 2(m), includes whole area under the control of the occupier. The said Rule is as follows:

> ***“2. Definitions.***
>
> ***xxx xxx xxx***
>
> *(m) "site" means any location where hazardous chemicals are manufactured or processed, stored, handled, used, disposed of and* ***includes the whole of an area under the control of an occupier*** *and includes pier, jetty or similar structure whether floating or not;”*

10. The accident has clear nexus to the activities of the occupier. Though two persons have died, compensation claimed to have been paid (@ Rs. 10 lakhs each to the kins of the deceased), is highly inadequate by any standard, either as per the parameters of the Workmen

Compensation Act, 1923 or under the common law. The object of compensation is to place the victim in the position which he would have been, but for the incident. The principle of 'Absolute Liability' applies to such cases, as per law laid down by the Hon'ble Supreme Court in *M.C Mehta v. Union of India,* (1987) 1 SCC 395. **There is also failure to comply with the mandate of statutory rules in mainlining safety norms and compensation is required to be paid for damage to the environment, which may need to be assessed. There is also need to have authentic report about the facts on the spot.**

11. The Tribunal has recently dealt with the issue of Industrial Safety and accountability for such failures in terms of compensating the victims, restoring the environment and taking preventive measures for future.

i. Order dated 01.06.2020, relating to incident of gas leak dated 07.05.2020 in **LG Polymers India Pvt. Limited** at Vishakhapatnam, resulting in death of 11 persons and injuries to more than 100, apart from other damage[1];

ii. Order dated 08.06.2020, relating to incident dated 03.06.2020 in a chemical factory, **Yashyashvi Rasayan Pvt. Ltd**. at Dahej, District Bharuch, Gujarat resulting in deaths and injuries and other damage[2];

iii. Order dated 02.07.2020, in relation to incident of **oil well blow out on 27.05.2020 at Baghjan in the Tinsukia District of Assam** resulting in deaths, injuries and damage to the environment[3].

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[1] OA No. 73/2020, In re: Gas Leak at LG Polymers Chemical Plant in RR Venkatapuram Village Visakhapatnam in Andhra Pradesh

[2] OA No. 22/2020(WZ) (Earlier OA 22/2020)(wz), Aryavart Foundation through its President vs. Yashyashvi Rasayan Pvt. Ltd. & Anr.

[3] OA No. 43/2020(EZ), Bonani Kakkar vs. Oil India Limited & Ors.

iv. Order dated 06.07.2020, relating to incident dated 30.06.2020 on account of gas leakage at **Sainor Life Sciences** factory at Parawada in industrial area on the outskirts of Vishakhapatnam[4];

v. Order dated 06.07.2020, relating to accident of **Ammonia gas leakage** at **Nandyal in Kurnool District, Andhra Pradesh in Spy Agro Industry** on 26.06.2020 resulting in death of one person and injury to three workers.[5]

vi. Order dated 08.07.2020, dealing with the incident dated 01.07.2020 resulting in death of 6 person and injury to 17 due to blast of boiler in **M/s Neyveli Thermal Power Station** (NLCIL), Cuddalore[6] and;

vii. Order dated 23.07.2020, in relation to incident of **fire engulfed the chemical plant** of **Visakha Solvents Ltd**, Vizag on 13.07.2020 at Ramky CETP Solvents building in Pharma City resulting in injuries[7].

viii. Order **dated 18.12.2020**, in relation to incident of **explosion in a plastic recycling factory at Sujapur in Malda on 1.12.2020** resulting in death of six persons, including two minors and serious injuries to four persons [8].

12. The Tribunal constituted Committees of Experts in first seven cases to find out the sequence of events, persons responsible, extent of damage, steps to be taken for restoration and other remedial measures. In the present case also, it needs to be done.

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4 OA No. 106/2020, News item published in the local daily "Economic Times" dated 30.06.2020 titled "Another Gas Leakage at Vizag Factory kills two, critically injures four…"

5 OA No. 107/2020, In Re: News item published in the local daily "Indian Express Sunday Express" dated 28.06.2020 titled "Gas Leak in Agro Company Claims life of one"

6 OA No. 108/2020, News item published in the "Indian Express" dated 01.07.2020 titled "Tamil Nadu Neyveli boiler blast: 6 dead, 17 injured"

7 OA No. 134/2020, News item published on 13.07.2020 in the local daily named "India Today" titled "Massive fire engulf Vizag chemical plant, explosions heard, injuries reported"

8 OA No. 272/2020, News item published in the "Times of India" dated 20.11.2020 entitled "Six killed as blast tears through Malda Pastic recycling factory"

13. Accordingly, in the present case also we constitute a six-member Expert committee comprising the MoEF&CC, CPCB, State PCB, NEERI, Nagpur, IIT, Mumbai and the District Magistrate, Solapur. The State PCB will be the nodal agency for coordination and compliance. The District Magistrate, Solapur may extend all logistic support for functioning of the Committee. The Committee may meet physically or by video conferencing and may also undertake visit the site and give a report on the following:

a. The sequence of events;
b. Causes of failure and persons and authorities responsible therefor;
c. Extent of damage to life, human and non-human; public health; and environment – including, water, soil, air;
d. Steps to be taken for compensation to victims and restitution of damaged property and environment, including the land, soil, groundwater and surface water, and the cost involved;
e. Remedial measures to prevent recurrence;
f. Any other incidental or allied issues found relevant.

14. The Committee may also suggest guidelines for safety measures to be adopted in the setting up and maintenance of biodigesters. The Committee may also consider reports furnished in incidents in first seven cases, mentioned in Para 11 above which are available with the CPCB. The Committee will be at liberty to associate any other expert or institution. The Committee may interact with all concerned stakeholders. The Committee may give its report within three months sent by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/ OCR Support PDF and not in the form of Image PDF.

15. Vide order dated 08.06.2020 in *O.A. No. 22/2020 (WZ), Aryavart Foundation through its President v. Yashyashvi Rasayan Pvt. Ltd. and Anr.*, we determined the interim compensation at Rs. 15 lakhs in the case of death, Rs. 5 lakhs in the case of serious injury and Rs. 2.5 lakhs to any other injured as follows:

> *"6. … we assess interim compensation for death to be 15 lacs each (taking into account multiplier of around 16 and loss of earning of about one lac a year, taking the minimum wage, apart from conventional sums), for grievous injury Rs. 5 lac per person, for other injuries of persons hospitalized Rs. 2.5 lac per person and for displacement at Rs. 25000/- per person."*

16. Accordingly, the said scale needs to be applied to the present case. Final compensation may be suggested by the Committee, including for restoration of environment. The industrial unit may deposit appropriate amount to cover interim compensation (deficit amount remaining to be paid) with the District Magistrate within one month, failing which, the District Magistrate may recover the same by coercive measures, as per law. The District Magistrate may ensure disbursement of the amount of interim compensation to the victims, excluding the payment already made. We request the District Legal Authority, Solapur to provide assistance to the victims in accessing legal remedies. **This order will be without prejudice to liability under the Criminal Law.**

List for further consideration on 23.04.2021.

A copy of this order be forwarded to the CPCB, State PCB, IIT, Mumbai, District Magistrate, Solapur, a nominee of the MoEF&CC, NEERI and the District Legal Authority, Solapur by email for compliance.

Adarsh Kumar Goel, CP

S.K. Singh, JM

Dr. S.S. Garbyal, EM

Dr. Nagin Nanda, EM

December 18, 2020
Original Application No. 274/2020
AB

INTERIM REPORT OF THE HON'BLE NGT CONSTITUTED COMMITTEE ON EXTENT OF DAMAGE TO ENVIRONMENT AND STEPS TO BE TAKEN FOR RESTITUTION OF DAMAGED ENVIRONMENT

1.0 BACKGROUND

Hon'ble NGT, Principal Bench, New Delhi initiated proceedings taking suo moto cognizance of accident with respect to news item published in the Indian Express dated 23.11.2020 entitled "Maharashtra: Two Killed, eight injured in methane gas leak in sugar factory" vide Original Application No. 274/2020. Accordingly, the Hon'ble NGT constituted a six-member Expert committee comprising the MoEF&CC, CPCB, State PCB, NEERI, Nagpur, IIT, Mumbai and the District Magistrate, Solapur, vide order dated 18/12/2020. The Committee has been directed to meet physically or by video conferencing and also to undertake visit of the site and give a report on the following;

a. The sequence of events;
b. Causes of failure and persons and authorities responsible therefor;
c. Extent of damage to life, human and non-human; public health; and environment – including, water, soil, air;
d. Steps to be taken for compensation to victims and restitution of damaged property and environment, including the land, soil, groundwater and surface water, and the cost involved;
e. Remedial measures to prevent recurrence;
f. Any other incidental or allied issues found relevant

Further, it was also directed to suggest the guidelines for safety measures to be adopted in the setting up and maintenance of biodigesters.

The committee has been constituted by MPCB vide office order No. BO/JD(WPC)/TB-210129-FTS-0225, dated 29.01.2021 and comprises of the following officials:

i. District Magistrate, Solapur
ii. Shri Suresh Kumar Adapa, Scientist D, MoEF&CC, Nagpur

iii. Shri Bharat K. Sharma, Regional Director, CPCB Regional Directorate Pune
iv. Prof. Anurag Garg, IIT Bombay, Mumbai
v. Dr. S. Ghuge, Principal Scientist, NEERI Nagpur
vi. Shri Nitin Shinde, Regional Officer, MPCB Pune

The committee conducted site visit of M/s Loknete Baburao Patil Agro Industries Ltd., Solapur – Distillery unit (hereinafter referred as the industry) on 09.02.2021 and gathered information given by the industry, MPCB during the said visit and subsequent meetings held (through video conference) on even dated 02.02.2021, 17.02.2021, 25.03.2021, 07.04.2021, 19.04.2021 and 01.06.2021 respectively.

This report is an INTERIM REPORT OF THE said COMMITTEE ON EXTENT OF DAMAGE TO ENVIRONMENT AND STEPS TO BE TAKEN FOR RESTITUTION OF DAMAGED ENVIRONMENT based on the said site visit of the committee and information given by M/s Loknete Baburao Patil Agro Industries Ltd., Solapur **–** Distillery unit and MPCB and subsequent discussions of the committee.

2.0 INTRODUCTION

Distillery industries are the key contributors to the world's economy, but these industries are also considered as one of the major potential sources of environmental pollution worldwide. Alcohol production in distilleries consists of four main steps viz. feed preparation, fermentation, distillation and packaging. In a distillery, sources of wastewater are stillage, fermenter and condenser cooling water and fermenter wastewater. Various researchers have reported that an average molasses-based distillery generates about 8 to 15 L of spent wash per litre of alcohol produced. The production and characteristics of spent wash are highly variable and dependent on feedstocks and various aspects of the ethanol production process. Wash water used to clean the fermenters, cooling water blow down, and boiler water blow down further contributes to its variability.

The wastewater generated from distillation of fermented mash (spent wash) is in the temperature range of 70–80^0 C, deep brown in colour, acidic in nature (low pH), and has high concentration of organic materials and solids. It is a very complex, caramelized and cumbersome agro industrial waste. However, pollution load of the

distillery effluent depends on the quality of molasses, unit operations for processing of molasses and process recovery of alcohols. Distillery spent wash has very high 5-day biochemical oxygen demand (BOD_5), chemical oxygen demand (COD) and high BOD/COD ratio. The amount of inorganic substances such as nitrogen, potassium, phosphates, calcium, sulphates are also very high. The high BOD and COD values of spent wash are mainly due to the presence of high organic content such as proteins, reduced sugars, polysaccharides, lignin, melanoidins, and waxes along with a complex mixture of recalcitrant organic pollutants. Its recalcitrant nature is due to presence of the brown polymers, melanoidins, which are formed by Maillard amino carbonyl reaction. These compounds have antioxidant properties, which render them toxic to many microorganisms such as those typically present in wastewater treatment processes. The defiance of melanoidins to degradation is apparent from the fact that these compounds escape various stages of wastewater treatment plants and finally enters into the environment, if not managed in environmentally sound manner. Apart from melanoidins, the other recalcitrant compounds present in the waste are caramel, variety of sugar decomposition products, anthocyanins, tannins and different xenobiotic compounds. The unpleasant odour of the effluent is due to the presence of skatole, indole and other sulphur compounds, which are not effectively decomposed by yeast during distillation. The chemical composition of spent wash has been studied extensively and each cubic meter of spent wash typically carries N, P, K, Ca, Mg, S, and organic matter to the tune of 1.8, 4, 11.5, 1, 2.2, 2.5 and 30 kg, respectively. The typical characteristics of distillery raw spent wash is depicted in the below Table 1.

Table 1: Characteristics of spent wash

S. No.	Parameters	Raw Spent wash	Bio-methanated Distillery Spent wash
1.	pH	3.8- 4.2	7.2- 7.8
2.	EC	28- 45.2	31- 40
3.	BOD_5	45000- 96000	8000- 9000
4.	COD	90000- 190000	33000- 48000
5.	Total Solids	80000- 190000	49000- 51100
6.	Suspended Solids	8400- 61900	6200- 7000
7.	Nitrogen	1200- 5000	1200- 1900
8.	Phosphorous	225- 3030	280- 400
9.	Potassium	9600- 17400	10500- 12100
10.	Chlorides	5000- 42000	7900- 8500
11.	Sulphates	3400- 9000	1050-3900
12.	Sodium	300- 670	621- 800

13.	Calcium	2100- 7000	1693-2400
14.	Magnesium	1700- 2100	976- 1900
15.	Zinc	3.5- 10	5.2- 7.0
16.	Copper	2.0- 5.0	3.0- 4.5
17.	Iron	28- 87	45- 63
18.	Manganese	4.0-5.0	4.5-7.0

Source: Valliappan, 1998; Murugaragavan, 2002; Rajkishore, 2008; Nandakumar, 2009; S. K. Rajkishore and N. S. Vignesh, 2012.

Note: Concentration of all parameters is expressed in mg/L, except pH.

2.1 ENVIRONMENTAL IMPACTS OF SPENT WASH ON SOIL ENVIRONMENT

When untreated/partially treated distillery wastewater is discharged into the environment, it may cause adverse impact on human health and environment. In water bodies, it reduces the penetration power of sun light causing a reduction in photosynthetic activity and depletion in dissolved oxygen (DO) content. Apart from the potential impacts (viz. eutrophication, depletion of dissolved oxygen, toxicological effects on the aquatic organisms etc.) of discharge of spent wash in water body, disposal/indiscriminate application of distillery spent wash on land is equally hazardous. The uncontrolled application of spent wash also leads to significant levels of soil pollution and acidification of soil. It is reported to inhibit seed germination, reduce soil alkalinity, cause soil manganese deficiency and damage agricultural crops. Further, application of distillery effluent to soil without proper monitoring, perilously affects the groundwater quality by altering its physicochemical properties such as colour, pH, electrical conductivity etc. due to leaching of the organic and inorganic ions.

The important indices indicating soil quality like Sodium Absorption Ratio (SAR), Soluble Sodium Percentage (SSP) and Kelly's ratio were reported to be adversely affected in the soil amended with distillery effluent. Constant disposal/irrigation of the soil with the effluent also led to deleterious effect on the soil properties. In fact, even regular application of anaerobically treated effluent on the soil is reported to cause detrimental effects on the microbial community which are an essential component of the soil ecosystem and are involved in regulating the various processes of nutrient recycling in soil. Thus, causing an impact by lowering of overall bacterial, actinomycetes count and nitrogen fixing bacteria i.e. *Rhizobium* and *Azotobacter also* reduced considerably; thereby interfering with the microbial activity and reducing the

overall fertility, productivity of the soil. The various types of impacts reported by various researchers are summarized in the below Table 2.

Table 2: Impact of raw and treated spent wash on soil characteristics

Impacts	Reference
Adverse effect on water retention, hydraulic conductivity & water stable aggregates	Jadhav and Savant (1975)
Mn deficiency in soil	Agarwal and Pandey (1994)
High potassium in spent wash was deleterious to soil health	Biswas et al. (1998)
Increased organic carbon, Ca, Mg, P, K & micro nutrients	Baskar et al. (2001); Rajkishore (2010)
Dose more than 250 m^3 ha^{-1} was detrimental	Mahimaraja and Bolan (2004)
Increased percent water stable aggregates and water retention capacity, but decreased the penetration resistance and salinity build up observed	Hati et al. (2007)
Fungi and actinomycetes population were inhibited soon after the application of bio-methanated spent wash	Rahkishore (2008)
Macro aggregates high and micro aggregates low in spent wash applied in soil	Biswas et al. (2009)

2.2 ABOUT THE INDUSTRY AND THE ACCIDENT

M/s Loknete Baburao Patil Agro Industries Ltd., Solapur – Distillery unit is engaged in production of Rectified spirit @ 900 kl/Month or Extra neutral alcohol @ 600 kl/Month or Ethanol @ 900 kl/Month and Fusel oil @ 1.8 MT/Month; using molasses as raw material procured from their integrated sugar unit located adjacent to the distillery unit. As per the Consent granted by MPCB, the distillery capacity is shall not exceed 30 KLPD.

It is gathered from the industry and also from the preliminary inspection report of MPCB Sub Regional Office, Solapur (inspection carried out on 22.11.2020) that the distillery unit was not in operation during 2019-2020 due to shortage of sugar cane and the distillery unit started its operation w.e.f. 02.11.2020. An accident occurred on 21.11.2020 in biodigester of the industry causing collapsing of the biodigester and spillage of spent wash contained therein and death of two persons.

2.3 WASTEWATER GENERATION AND THEIR MANAGEMENT BEFORE THE ACCIDENT

2.3.1 Spent wash generation and storage: It is gathered from the industry and also from the preliminary inspection report of MPCB Sub Regional Office, Solapur (inspection carried out on 22.11.2020) that the distillery started its operation w.e.f. 02.11.2020 and as per records of Police Department, the accident took place on 21.11.2020. Average production of ethyl alcohol as per excise register is 28.123 m^3/day against the consented capacity of 30 m^3/day, and corresponding average daily spent wash generation is 280 to 295 m^3/day. The total spent wash generated w.e.f. 02.11.2020 till 21.11.2020 (20 days) is, therefore, 5,600 m^3. As per information provided by the industry, raw spent wash was fed to the biodigester @ 2 m^3/hr (against the actual feed to the biodigester @ 14 to 16.7 m^3/hr) w.e.f. 07.11.2020, after the level was saturated in 5 days raw spent wash storage lagoon. Accordingly, 720 m^3 of raw spent wash was fed to the biodigester w.e.f. 07.11.2020 to 21.11.2020.

As per the Environment Clearance (EC) granted by MoEF&CC vide F.no. J-11011/473/2006-IA-II (I), dated 19.05.2008; under specific conditions S. no. viii, the industry has provided 30 days impervious (concrete) lagoon for storage of treated effluent (i.e. bio-methanated spent wash). Also, as per CREP guidelines the industry has provided 5 days impervious (concrete) lagoon for storage of raw spent wash. Compliance status and the details of spent wash storage lagoons provided by the industry is depicted in the below Tables 3 & 4.

Table 3: Compliance status of spent wash storage lagoons.

S. no.	Capacity of storage lagoons	
	Installed capacity	**Compliance w.r.t. specific conditions of EC and CREP guidelines**
1.	5 days impervious (concrete) lagoon of 1,500 m^3	Maximum spent wash generation @ 295 m^3/day x 5 days = 1,475 m^3. Hence the provided 5 days impervious (concrete) lagoon capacity is adequate.
2.	30 days impervious (concrete) lagoon of 9,000 m^3	Maximum spent wash generation @ 295 m^3/day x 30 days = 8,850 m^3. Hence the provided 30 days impervious (concrete) lagoon capacity is adequate.

Table 4: Details of raw spent wash stored in lagoons (information as provided by the industry)

S. no.	Particulars	Remarks
1.	5 days impervious (concrete) lagoon of 1,500 m^3	Filled with 1,500 m^3 (@ 280 m^3/day x 5 days) of raw spent wash which is intended for feed into biodigester
2.	30 days impervious (concrete) lagoon of 9,600 m^3	Filled with 3,380 m^3 (280 m^3/day x 15 days) mixture of raw spent wash & partially treated spent wash
Total quantity of raw spent wash stored in 5 and 30 days impervious (concrete) lagoons as on date of accident		4,880 m^3

2.3.2 Mass balance of spent wash generation

The mass balance of spent wash produced during 20 days operation is shown in Table 5.

Table 5: Spent wash generation and disposal

Mass Balance of Spent Wash Generation		
Spent wash generation @ 280 m^3/day	Total spent wash generated during 20 days = 5,600 m^3 (280 m^3/day x 20 days)	A. Raw spent wash feed to the biodigester = 720 m^3
		B. Raw spent wash stored in 5 days storage lagoon @ 1,500 m^3
		C. Balance raw spent wash stored in 30 days storage lagoon @ 3,380 m^3 which is in violation of consent condition as only treated spent wash after bio-methanation is permitted to store in 30 days storage lagoon
Total spent wash generation (A + B + C = 5,600 m^3)		

2.3.3 Spent wash treatment system

As per conditions of CC&A, the industry has provided biodigester followed by bio-composting for the treatment of distillery effluent @ 295 m^3/day. The design capacity of biodigester is 400 m^3/day. The effluent from distillery section is received into a receiving tank (two day holding capacity) where suspended solids is allowed to settle, the settled sludge is used in bio-composting and the supernatant effluent is pumped to biodigester. The supernatant effluent is mixed with recycled biomass from lamella clarifier to maintain a feed temperature of 36-38°C and mixed effluent is fed into the biodigester. The feed rate is controlled by a manual control valve and a flow meter provided in the feed line and the sludge recycling line. In the biodigester the effluent mixed with the recycled biomass from the lamella clarifier get further mixed with contents of the digester with the help of central and lateral agitators, which provide

homogeneous mixing in the biodigester. As per the technical specification, the retention period of the biodigester is 24 days. Anaerobic digestion takes place in the biodigester, as a result of which BOD & COD is reduced and biogas is generated. The digested effluent/biomass mixture overflows into a degassing pond where entrapped gases are released. Degassed effluent flows to lamella clarifier for separation of active biomass from the treated effluent. The clarified effluent from the lamella clarifier is discharged to 30 days spent wash storage lagoon whereas the separated biomass is pumped back continuously into the biodigester to maintain the concentration of active biomass. The excess biomass is removed from the bottom of biodigester regularly to sludge drying beds for disposal, or to be used as manure.

As per the analysis report (dated 22.03.2013) provided by the industry, it is observed that the biogas produced in the biodigester is having the composition of 64.51% methane, 35.31% carbon dioxide and 0.17% hydrogen sulphide and accumulates in digester roof, from where it flows to the gasholder. The gasholder acts as am intermediate gas storage as well as a Pressure Control Vessel (PCV). The biogas is pumped to the boiler house by a biogas blower. Surplus gas, if any, is burnt in a gas flare unit whenever gas is not being utilised in the boiler. 'Flame Arresters' are provided in gas lines to protect the biodigester from backfire from the flare and/or the boiler burner. Also, 'Over/Under' pressure release device is provided on biogas biodigester for its safety from over pressure/vacuum. Information w.r.t. design of biodigester as provided by the industry is depicted in the below Table 6.

Table 6: Technical specification of biodigester tank and gas handling system (information as provided by the industry)

Item	Capacity/Details	UoM
Biodigester	9,600	m^3
Dimensions	26 Diameter x 18 Height	m
Material of construction	MS	--
Make	M/s Eco board Ltd., Pune	--
Gas holder capacity	300	m^3
Dimension	8 Diameter x 6 Height	m
Plate thickness	6	mm
Material of construction	Basin: MS & Floating drum: MS with FRP 2 mm/clear epoxy coating inside and synthetic enamel paint outside	

As per the information provided by the industry, biodigester was filled with previous season's (i.e., 2018-19) spent wash of 5,780 m^3 i.e. ~60% of biodigester capacity. Further, during the current operating season ~720 m^3 of raw spent wash was fed to the biodigester w.e.f. 07.11.2020 to 21.11.2020. Hence, the total content of spent wash in the biodigester i.e. previous season spent wash and current season raw spent wash amounts to 6,500 m^3. Further, the distillery was not in operation during 2019-20 and the distillery resumed its operation w.e.f. 02.11.2020. Therefore, the previous season spent wash and the biomass was in the biodigester from more than a year.

During the last operative season i.e. 2018-19 total biogas generation and utilization is in the tune of 16,56,000 m^3 and during 2019-20, the integrated sugar-distillery unit was not in operation. Whereas during 2020-21, it is informed that the biodigester plant was not yet stabilized and hence biogas was no generated. Also, the industry has supplemented the information as mentioned in the manual provided by the supplier of biodigester i.e. M/s Eco Board that methane gas generation will start after 6-8 weeks from starting of spent wash feed. Information w.r.t. details of quantity of spent wash in the biodigester as provided by the industry is depicted in the below Table 7.

Table 7: Quantity of spent wash in biodigester (information as provided by the industry)

S. No.	Particulars	Quantity, m^3
1.	Designed capacity of biodigester	9,600
2.	Total volume of contents of biodigester in 2020-21 (previous season spent wash of 2018-19 + raw spent wash of 2020-21 as on 21/11/2020)	6,500 (= 5,780 + 720)

Note: Distillery was not in operation during 2019-20.

2.3.4 Bio-compost preparation

As per conditions of CC&A, the industry has provided biodigester for the treatment of distillery effluent @ 295 m^3/day followed by bio-composting on 7.5 acre of land to achieve ZLD conditions. The bio-compost is prepared by utilizing press mud (from their integrated sugar-distillery unit), bio-methanated spent wash, yeast sludge and boiler ash. Reportedly, the industry has maintained logbook to record the operational parameters viz. moisture content, temperature in windrows, details of aero tilling etc.

During committee inspection the industry informed that the logbook was destroyed in the accident and no records are available. The industry has provided impervious open compost yard, which is allowed to operate for only 270 days (excluding rainy season). The technical details of bio-compost yard and ratio for preparation of bio-compost is depicted in the below Table 8.

Table 8: Technical details of bio-compost yard and ratio of bio-compost (information as provided by the industry)

Item	Dimensions
Length and width	182 m x 168 m
No. of windrows	36 nos.
Length of windrow	178 m
Height of windrow	1.5 m
Width at bottom & top of windrow	3 m & 1.5 m
Date of formation of windrows	25.10.2020
Date of inoculation of bio-culture	26.10.2020
Ratio of press mud to spent wash	1: 0.42
Ratio of press mud to boiler ash	1: 0.05
Date of maturity	40 – 45 days

The details of utilization of press mud, boiler ash and spent wash, for preparation of bio-compost w.e.f. 23.10.2020 to 15.12.2020 are depicted in Table 9.

Table 9: Details of utilization of raw materials for preparation of bio-compost (information as provided by the industry)

S. No.	Particulars	Quantity, MT
1.	Total quantity of spent wash utilized w.e.f. 02.11.2020 to 15.12.2020	3,568 m^3
2.	Total quantity of press mud utilized w.e.f. 23.10.2020 to 15.12.2020	8,480
3.	Total quantity of boiler ash utilized w.e.f. 23.10.2020 to 15.12.2020	424

As per Office Memorandum of MoEF&CC vide F. No. J-11013/55/2017-IA-II (I), dated 04.09.2018; bio-compost prepared has to be analysed for parameters as per the Fertilizer Control Order (FCO) with latest amendments. The industry has provided

copy of analysis results of two bio-compost samples and the analysis results were compared with the standards prescribed in FCO.

The parameters analysed in bio-compost are only pH, colour, odour, electrical conductivity, particle size, total nitrogen, potassium, phosphorous, C/N ratio, moisture content, bulk density and total organic carbon. Rest of the parameters as per FCO i.e. total heavy metals (As, Cd, Cr, Cu, Pb, Hg, Ni & Zn) are not analysed. The concentration of total nitrogen, potassium, phosphorous and total organic carbon in all the samples of bio-compost is reported above the minimum required values as specified in the FCO standards. Similarly, C/N ratio in all the samples of bio-compost is reported within the values as specified in the FCO standards. However, electrical conductivity was found to be more than the standard prescribed in the FCO standards (i.e 9.54 and 9.12 dS/m against the prescribed standard of 4 dS/m). Moisture content in the bio-compost samples were also found to be higher than the standards prescribed in the FCO standards (i.e. 38 and 32 % against the prescribed standard of 25%).

2.4 SPENT WASH SPILLAGE DURING THE ACCIDENT AND THEIR MANAGEMENT AFTER THE ACCIDENT

It is gathered from the industry and also from the preliminary and follow-up inspection reports of MPCB Sub Regional Office, Solapur (inspections carried out on 22.11.2020 & 11.12.2020) that on the day of accident, ~6,500 m^3 (previous season spent wash of 2018-19 @ 5,780 m^3 and raw spent wash of 2020-21 @ 720 m^3) of spent wash was spilled from the biodigester and spread within the industry premises.

In order to contain spread of spilled spent wash, the industry constructed two pits to collect the spilled spent wash. It has been reported that the industry has collected ~4,400 m^3 of spent wash by excavating two temporary pits of 2,700 m^3 & 1,800 m^3 capacity each. The spilled spent wash from the earthen pits was filled in tankers through pumps and stored in 30 days spent wash impervious (concrete) lagoon. In addition to this, spent wash also spread in nearby nalah; wherein the industry had constructed temporary bunds and recollected ~600 m^3 of spent wash and in tankers through pumps and stored in 30 days spent wash impervious (concrete) lagoon. It is estimated that ~5,000 m^3 of spilled spent wash was recollected and stored in 30 days

spent wash impervious (concrete) lagoon. Hence, the total spent wash quantity in 30 days spent wash impervious (concrete) lagoon is 8,480 m^3 against the designed capacity of 9,000 m^3. Remaining spilled spent wash (i.e. 1,500 m^3 out of 6,500 m^3), which couldn't be collected, remained within the biodigester area and adjoining areas viz. bagasse yard, mango orchard, bio-compost yard, distillery premises and cane yard. The industry has reported estimated affected area with spilled spent wash of about 6 acres i.e. 24,282 m^2 area. The reported affected area-wise break-ups (approximate) of spread spent wash are as follows: bagasse yard: 1 acre; mango orchard: 1 acre; bio-compost yard: 1 acre; distillery premises: 1 acre, and; cane yard: 2 acres; respectively. The spent wash-soaked soil from these areas were collected. It has been informed that the top surface of the soil (~10 cm depth) from the said areas were also scrapped using excavators and the scrapped contaminated soil of ~4,700 MT was stored in the existing bio-compost preparation yard. The spent wash spread in the bagasse was recollected as such and after drying it was utilized in captive boiler of the unit, however, the data on exact quantification of bagasse utilized could not be provided by the industry.

Further, the industry had also scrapped ~1,050 MT spent wash contaminated soil from the nalah and stored in the existing bio-compost preparation yard. In total, the industry had scrapped out ~5,750 MT of spent wash contaminated soil within the unit premises. The industry has supplemented the details of no. of vehicles utilized, date and no. of trips covered regarding quantification for collection of spent wash and contaminated soil. The details of the same is provided at **Annexure-I.** The spent wash spread areas is delineated in the below Google image (Figure 1).

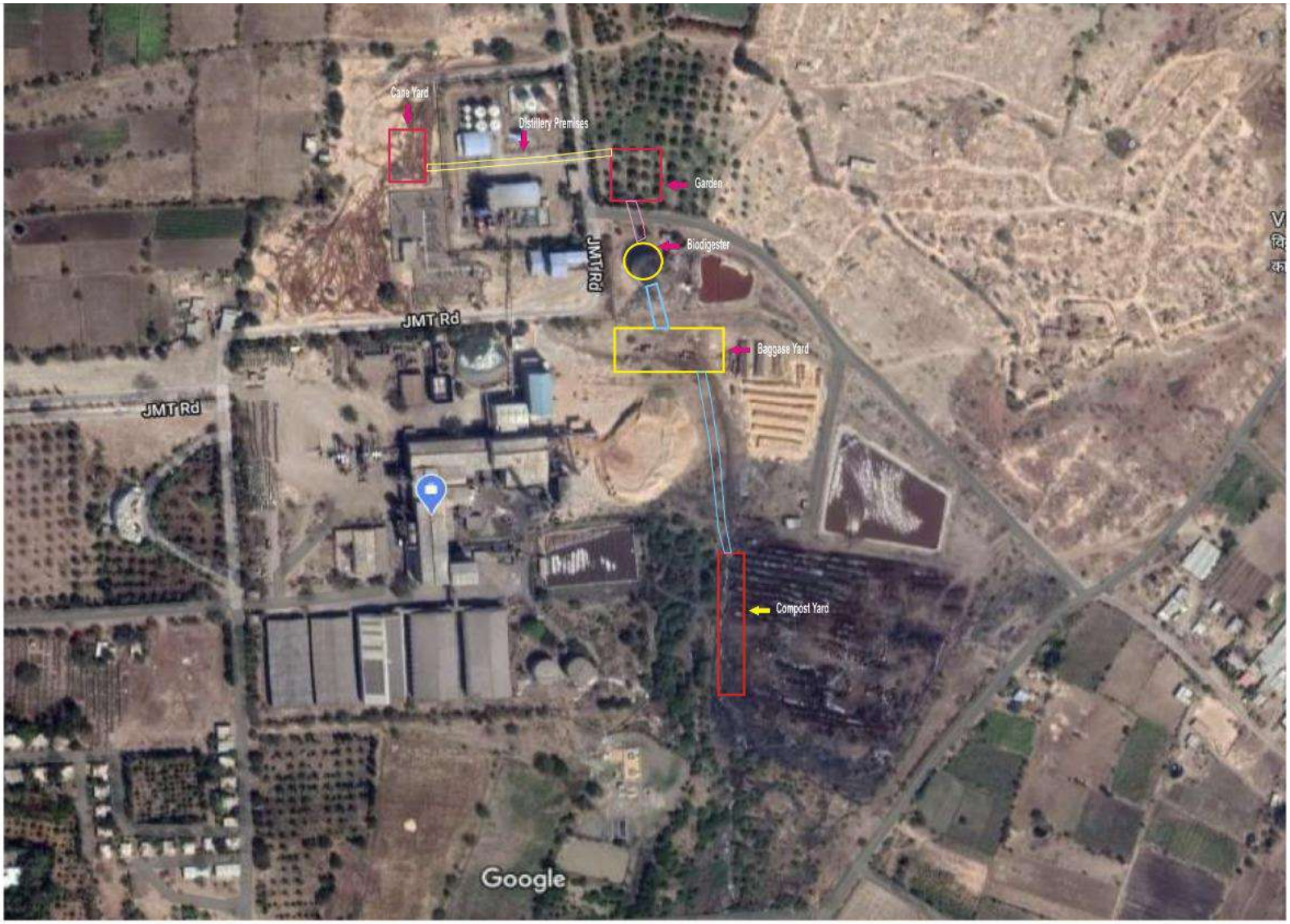


Figure 1: Google imagery indicating the spread of spent wash within the industry premises.

Table 10: Details of Spent wash storage in lagoons and their use in bio-compost during November, 2020 to March 2021 (information as provided by the industry)

S. No.	Particulars	Stored in 5 days storage Lagoons, m^3	Stored in 30 days storage lagoons, m^3	Used in composting, m^3
1.	Spent wash stored prior to accident	1,500	3,380	3,568
2.	Spent wash stored after the accident (including collected spilled spent wash from the biodigester)	1,500	8,380 (3,380 + 5,000)	6,312
Net Spent wash		**Nil**	**Nil**	**9,880**

Based on the preliminary inspection report of MPCB Sub Regional Office, Solapur (inspection carried out on 22.11.2020); MPCB Regional Office, Pune issued directions to the industry vide dated 01.12.2020 u/s 32 and 33 (A) of the Water (Prevention and Control of Pollution) Act, 1974 & u/s 31 (A) of the Air (Prevention and Control of Pollution) Act, 1981 to submit action plan for remediation and restoration of the soil. In response to MPCB directions, the industry submitted a proposal to utilize 5,750 MT of contaminated soil by proportionating @ 20% with the press mud for preparation of bio-compost in consultation with M/s Vasantdada Sugar Institute (VSI), Pune. However, the industry didn't provide the official correspondence between the industry and VSI, Pune regarding the proposal and suggestion for utilization of contaminated soil for preparation of bio-compost. It is gathered that the industry had started proportionating of contaminated soil @ 20% with the press mud w.e.f. 15.12.2020 for preparation of bio-compost. The technical details of bio-compost yard and ratio for preparation of bio-compost is depicted in the below Table 11.

Table 11: Technical details of bio-compost yard and ratio of bio-compost (information as provided by the industry)

Item	Dimensions
Length and width	182 m x 168 m
No. of windrows	36 nos.
Length of windrow	178 m
Height of windrow	1.5 m

Width at bottom & top of windrow	3 m & 1.5 m
Date of formation of windrows	25.10.2020
Date of inoculation of bio-culture	26.10.2020
Ratio of press mud to spent wash	1: 0.42
Ratio of press mud to boiler ash	1: 0.05
Ratio of press mud to contaminated soil	1: 0.2
Date of maturity	40 – 45 days

The details of utilization of spent wash, press mud, boiler ash and contaminated soil for preparation of bio-compost w.e.f. 15.12.2020 to 24.03.2021 is depicted in the below Table 12.

Table 12: Details of utilization of raw materials for preparation of bio-compost

S. No.	Particulars	Quantity, MT
1.	Total quantity of contaminated soil scrapped and available as on 15.12.2020	5,750
2.	Total quantity of spent wash utilized w.e.f. 15.12.2020 to 24.03.2021	6,312 m^3
3.	Total quantity of press mud utilized w.e.f. 15.12.2020 to 24.03.2021	15,001
4.	Total quantity of boiler ash utilized w.e.f. 15.12.2020 to 24.03.2021	750
5.	Total quantity of contaminated soil utilized (proportionating of contaminated soil @ 31.3% with press mud) w.e.f. 15.12.2020 to 24.03.2021	4,696.2
6.	Balance quantity of contaminated soil lying in compost yard as on 24.03.2021	1,053.8

The parameters analysed in bio-compost (produced using the contaminated soil) are only pH, colour, odour, electrical conductivity, particle size, total nitrogen, potassium, phosphorous, C/N ratio, moisture content, bulk density and total organic carbon. Rest of the parameters as per FCO i.e. total heavy metals (As, Cd, Cr, Cu, Pb, Hg, Ni & Zn) are not analysed. The concentration of total nitrogen, potassium, phosphorous and total organic carbon in all the samples of bio-compost is reported above the minimum required values as specified in the FCO standards. Similarly, C/N ratio in all the samples of bio-compost is reported within the values as specified in the FCO standards. However, electrical conductivity was found to be more than the standard prescribed in the FCO standards (i.e 9.45 and 9.30 dS/m against the prescribed

standard of 4 dS/m. Moisture content in the bio-compost samples was also found to be higher than the standards prescribed in the FCO standards (i.e. 37 and 30 % against the prescribed standard of 25%).

2.5 CHARACTERIZATION AND ASSESSMENT OF SOIL QUALITY

The committee, during its visit on 09.02.2021 collected samples of soil from 08 different locations covering the entire impacted area due to the accident and also from one area not having any impact due to accident as reference/background soil sample. The impact area was delineated based on the spill occurred during the accident. Initially, the committee collected the location map and made a reconnaissance survey of the impact area. Based on the discussion and spill profile of spent wash in the area, the committee decided to collect the soil samples at various depths ranging from the surface level, at 20 cm depth and at 40 cm depth.

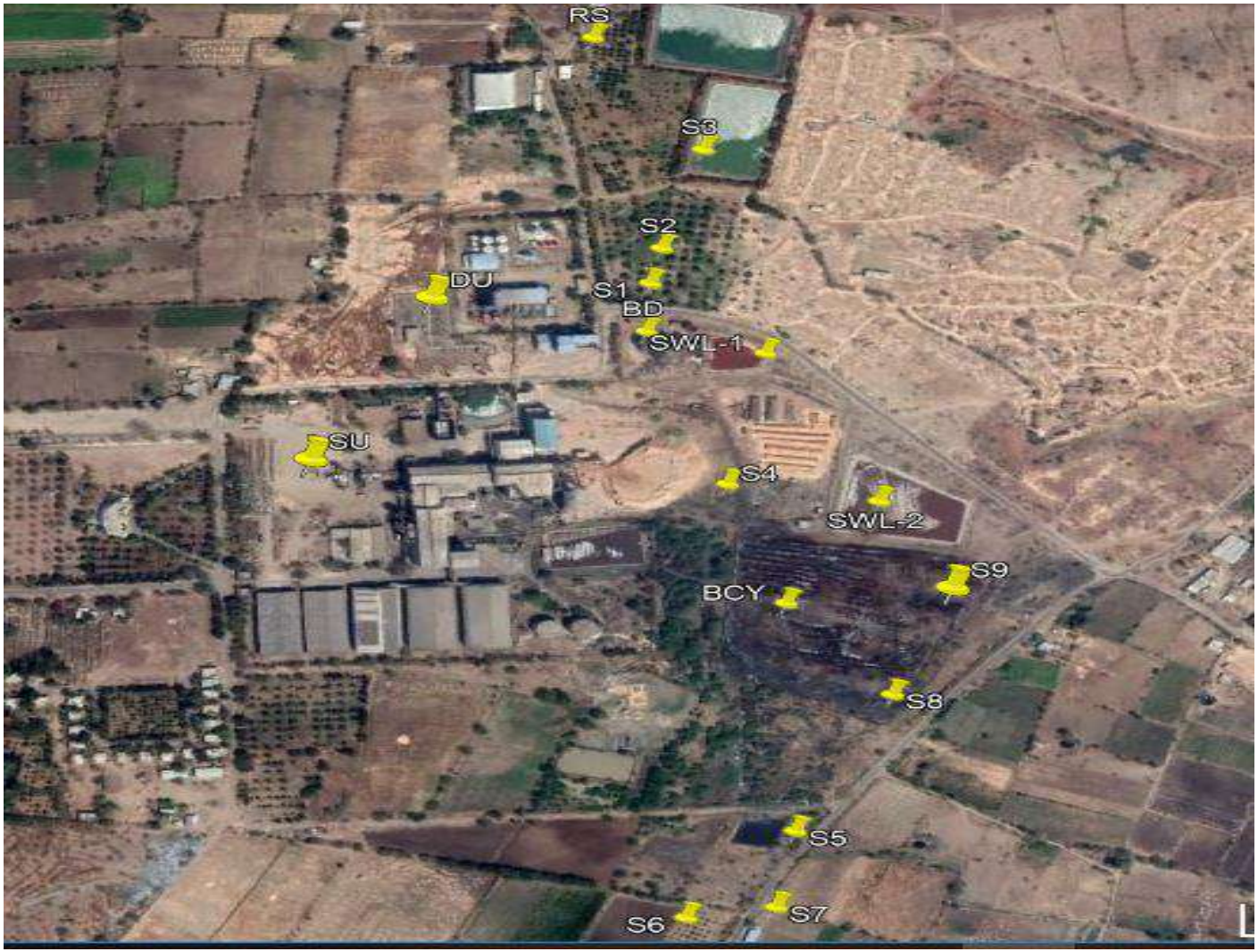
In addition to the above soil samples, composite soil (contaminated with spent wash and scrapped as 10 cm top soil) sample was collected from the bio-compost yard. The details of soil sampling locations along with geographical coordinates are depicted in the below Table 13.

Table 13: Details of soil sampling locations

Sampling location	Geographic location, Degree decimals		Details of sampling locations
	Latitude	Longitude	
S1	17.87411 N	75.59058 E	Top soil sample taken from the mango orchard (Northern side of biodigester)
			Soil sample taken at 20 cm depth from the mango orchard (Northern side of biodigester)
S2	17.87448 N	75.59066 E	Top soil sample taken from the mango orchard (Northern side of biodigester, middle of mango orchard)
			Soil sample taken at 20 cm depth from the mango orchard (Northern side of biodigester, middle of mango orchard)
S3	17.87552 N	75.59095 E	Top soil sample taken from the area, opp. distillery gate (North-eastern side of biodigester)
			Soil sample taken at 20 cm depth from the area, opp. distillery gate (North-eastern side of biodigester)
			Soil sample taken at 40 cm depth from the area, opp. distillery gate (North-eastern side of biodigester)

S4	17.87203 N	75.59113 E	Top soil sample taken from the area, Southern side of biodigester
			Soil sample taken at 20 cm depth from the area, Southern side of biodigester
S5	17.86855 N	75.5916 E	Top soil sample taken from the Bitale Mohol Road, Near Kaccha Pit (Southern side of biodigester)
			Soil sample taken at 20 cm depth from the Bitale Mohol Road, Near Kaccha Pit (South side of biodigester)
S6	17.86771 N	75.59086 E	Top soil sample taken from the lemon farm (D/S of Kaccha Pit, South-western side of biodigester)
			Soil sample taken at 20 cm depth from the lemon farm (D/S of Kaccha Pit, South-western side of biodigester)
S7	17.86781 N	75.59147 E	Top soil sample taken from the maize farm (D/S of Kaccha Pit, Southern side of biodigester)
			Soil sample taken at 20 cm depth from the maize farm (D/S of Kaccha Pit, Southern side of biodigester)
S8	17.8699 N	75.59227 E	Top soil sample taken from the downstream of compost yard (South-eastern side of biodigester)
			Soil sample taken at 20 cm depth from the downstream of compost yard (South-eastern side of biodigester)
			Soil sample taken at 40 cm depth from downstream of compost yard (South-eastern side of biodigester)
S9	17.87092 N	75.59267 E	Composite soil (contaminated with spent wash) sample collected from the bio-compost yard
RS	17.87675 N	75.59015 E	Reference top soil sample (Northern side of mango orchard)
			Reference soil sample taken at 20 cm depth (Northern side of mango orchard)

The soil sampling locations are depicted in following Google earth image. As it is evident from the Google earth image (Figure 2), soil sampling locations S-1, S-2, S-3 and reference soil sampling location are towards the Northern side of biodigester and well within 1 km radius from the biodigester. The locations S-4, S-5, S-6, S-7, S-8 and S-9 are towards the Southern side of the biodigester and also located within 1 km radius from the biodigester. The maximum spent wash was found towards the Southern side of the biodigester and the industry had contained the spent wash by excavating temporary pits and re-collected the spilled spent wash into 30 days impervious (concrete) lagoon.



Legend

S1	**:**	**Soil sampling location-1**
S2	**:**	**Soil sampling location-2**
S3	**:**	**Soil sampling location-3**
S4	**:**	**Soil sampling location-4**
S5	**:**	**Soil sampling location-5**
S6	**:**	**Soil sampling location-6**
S7	**:**	**Soil sampling location-7**
S8	**:**	**Soil sampling location-8**
S9	**:**	**Soil sampling location-9**
RS	**:**	**Reference soil sampling location**
DU	**:**	**Distillery unit**
SU	**:**	**Sugar unit**
BD	**:**	**Biodigester**
SWL-1	**:**	**Spent wash lagoon-1**
SWL-2	**:**	**Spent wash lagoon-2**
BCY	**:**	**Bio-compost yard**

Figure 2: Google imagery of the soil sampling locations in and around the industry and other environmental infrastructure provided.

The collected soil samples were analysed for parameters viz. pH, electrical conductivity, organic carbon, available nitrogen, available phosphorous, available potassium, available sulphur, sodium absorption ratio and cation exchange capacity so as assess residual impact (after scrapping of 10 cm top soil by the industry) on soil quality due to spillage of spent wash. The collected composite soil (contaminated with spent wash) sample from the bio-compost yard was also analysed for various physico-chemical parameters viz. pH, electrical conductivity, moisture content, organic carbon, ash content, total nitrogen, total phosphorous, total potassium, total iron, total manganese, total zinc, total copper and C/N ratio.

The soil samples were submitted to Mahatma Phule Krishi Vidyapeeth, Pune – an Agricultural University, for analysis. The analysis results of the aforesaid soil samples collected at surface level, at 20 cm depth and at 40 cm depth along with the comments provided by M/s Mahatma Phule Krishi Vidyapeeth, Pune, are depicted in Tables 14, 15 & 16, respectively. The physico-chemical properties of the soil sample collected from bio-compost yard (i.e., S9) are presented in Table 17.

Table 14: Analysis results of soil samples taken at surface level

S. No.	Sampling location	Parameters								
		pH	EC, dS/m	OC (%)	N, Kg/ha	P, Kg/ha	K, Kg/ha	S, ppm	SAR	CEC Cmol/kg
1.	S1	6.70	3.92	0.89	338	51	3407	20	42.66	55.30
	Rating	Neutral	*	High	Medium	Very High	Very High	Sufficient	--	--
2.	S2	7.14	1.92	0.36	248	43	1753	38	45.87	55.10
	Rating	Neutral	*	Low	Low	Very High	Very High	Sufficient	--	--
3.	S3	7.06	7.68	0.50	169	14	2573	19	47.96	54.20
	Rating	Neutral	*	Medium	Low	Low	Very High	Sufficient	--	--
4.	S4	7.20	13.52	0.54	394	114	8075	47	38.23	54.40
	Rating	Neutral	*	Medium	Medium	Very High	Very High	Sufficient	--	--
5.	S5	7.09	5.96	0.56	405	31	3917	40	32.24	54.70
	Rating	Neutral	*	Medium	Medium	High	Very High	Sufficient	--	--
6.	S6	7.46	0.71	0.47	259	20	916	39	12.78	54.40
	Rating	Neutral	Normal	Medium	Low	Medium	Very High	Sufficient	--	--
7.	S7	7.27	1.48	0.44	79	39	1028	57	29.77	54
	Rating	Neutral	*	Medium	Very Low	Very High	Very High	Sufficient	--	--
8.	S8	7.01	5.59	0.57	124	31	293	31	42.53	51.80
	Rating	Neutral	*	Medium	Very Low	High	High	Sufficient	--	--
9.	**RS**	**7.67**	**0.32**	**0.20**	**124**	**2**	**224**	**35**	**29.05**	**52.80**
	Rating	**Mildly Alkaline**	**Normal**	**Low**	**Very Low**	**Very Low**	**Mod. High**	**Sufficient**	**--**	**--**

Table 15: Analysis results of soil samples taken at 20 cm depth

S. No.	Sampling location	Parameters								
		pH	EC, dS/m	OC (%)	N, Kg/ha	P, Kg/ha	K, Kg/ha	S, ppm	SAR	CEC Cmol/kg
1.	S1	7.24	1.07	0.20	124	35	659	35	28.65	54.60
	Rating	Neutral	*	Low	Very low	High	Very High	Sufficient	--	--
2.	S2	7.46	0.63	0.10	135	8	717	39	21.15	56.40
	Rating	Neutral	Normal	Very Low	Very Low	Low	Very High	Sufficient	--	--
3.	S3	7.03	3.21	0.83	158	7	3520	34	32.20	54.60
	Rating	Neutral	*	High	Low	Low	Normal	Sufficient	--	--
4.	S4	8.42	3.88	0.14	101	22	7095	75	27.44	55.10
	Rating	Neutral	*	Very Low	Very Low	Very High	Very High	Sufficient	--	--
5.	S5	7.20	4.85	0.27	473	27	3017	46	30.88	55.20
	Rating	Neutral	*	Low	Mod. High	Mod. High	Very High	Sufficient	--	--
6.	S6	7.62	0.42	0.39	180	27	449	42	21.14	54.60
	Rating	Mildly Alkaline	Normal	Low	Low	Mod. High	Very High	Sufficient	--	--
7.	S7	7.03	2.44	0.56	214	73	1893	55	36.25	52.10
	Rating	Neutral	*	Medium	Low	Very High	Very High	Sufficient	--	--
8.	S8	7.06	4.10	0.54	135	45	263	27	40.52	55
	Rating	Neutral	*	Medium	Very Low	Very High	High	Sufficient	--	--
9.	**RS**	**7.83**	**0.20**	**0.17**	**102**	**20**	**114**	**39**	**27.71**	**55.50**
	Rating	**Mildly Alkaline**	**Normal**	**Normal**	**Very Low**	**Medium**	**Low**	**Sufficient**	--	--

Table 16: Analysis results of soil samples taken at 40 cm depth

S. No.	Sampling location	Parameters								
		pH	EC, dS/m	OC (%)	N, Kg/ha	P, Kg/ha	K, Kg/ha	S, ppm	SAR	CEC Cmol/kg
1.	S3	6.77	2.68	1.09	158	4	2412	50	36.95	53.60
	Rating	Neutral	*	Very High	Low	Very Low	Very High	Sufficient	--	--
2.	S8	7.11	3.03	0.18	203	45	447	57	19.23	54.70
	Rating	Neutral	*	Very Low	Low	Very High	Very High	Sufficient	--	--
3.	**RS**	**7.83**	**0.20**	**0.17**	**102**	**20**	**114**	**39**	**27.71**	**55.50**
	Rating	**Mildly Alkaline**	**Normal**	**Normal**	**Very Low**	**Medium**	**Low**	**Sufficient**	--	--

Note: The rating has been reported by M/s Mahatma Phule Krishi Vidyapeeth, Pune – an agricultural university

Table 17: Analysis of physico-chemical parameters of composite soil (contaminated with spent wash) sample, S9 collected from bio-compost yard.

S. No.	Parameter	Concentration	Unit
1.	pH	7.49	--
2.	Electrical Conductivity	5.25	dS/m
3.	Moisture	62.75	%
4.	Organic Carbon	12.39	%
5.	Ash	15.89	%
6.	Total Nitrogen	1.32	%
7.	Total Phosphorus	0.55	%
8.	Total Potassium	0.63	%
9.	Total Fe	1596	mg/Kg
10.	Total Mn	318	mg/Kg
11.	Total Zn	172	mg/Kg
12.	Total Cu	68	mg/Kg
13.	C:N ratio	9.39	--

3.0 RESULTS AND DISCUSSION

It is inferred from the soil quality analysis results that;

- Reference soil sample collected from the top surface and at 20 cm depth (Northern side of mango orchard) reveals that pH was mildly alkaline (7.67 and 7.83), electrical conductivity was normal (0.32 dS/m and 0.2 dS/m), very low percentage of organic carbon (0.2% and 0.17%), very low concentration of nitrogen (124 Kg/ha and 102 Kg/ha), very low and medium concentration of phosphorous (2 Kg/ha and 20 Kg/ha) and moderately high and low concentration of potassium (224 Kg/ha and 114 Kg/ha) respectively. Hence, it is evident that the soil sample collected at this location is not having significant impact of organic carbon and nutrients from spent wash.

- Soil sample collected at location no.1 i.e., top soil taken from the mango orchard (Northern side of biodigester) reveals that it contains higher percentage of organic carbon (0.89%), very high concentration of phosphorous (51 Kg/ha) and potassium (3407 Kg/ha). Similarly, the soil sample collected at location no.1 mango orchard (Northern side of biodigester) at 20 cm depth revealed high concentration of phosphorous (35 Kg/ha) and very high concentration of

potassium (659 Kg/ha). As it is evident from the analysis results that the top soil is contaminated with spent wash, even after the industry had initially scrapped ~10 cm of top soil where the spent wash has been spread in that area. Hence the probability of contamination of soil with potassium beneath the 20 cm soil layer cannot be ruled-out.

- Soil sample collected at location no. 2 i.e. at 20 cm depth taken from the middle of mango orchard (Northern side of biodigester) reveals that it contains very higher concentration of potassium (717 Kg/ha).

- Soil sample collected at location no. 3 i.e. at three different depths from the area, opp. Distillery main gate reveals that it contains medium to very high percentage of organic carbon (0.5%, 0.83% and 1.09%) and very high concentration of potassium (2573 Kg/ha, 520 Kg/ha and 2412 Kg/ha). As it is evident from the analysis results that the soil sample collected at 40 cm depth also has been contaminated with organic carbon and potassium.

- Soil sample collected at location no.4 i.e. top soil taken from the area, southern side of biodigester reveals that it contains very high concentration of phosphorous (114 Kg/ha) and potassium (8075 Kg/ha). Similarly, the soil sample collected at location no.4 i.e. soil sample taken at 20 cm depth from the area, southern side of biodigester reveals that it contains high concentration of phosphorous (22 Kg/ha) and very high concentration of potassium (7095 Kg/ha).

- Soil sample collected at location no. 5 and 6 i.e. at 20 cm depths i.e. soil sample taken from the Bitale Mohol Road, Near Kaccha Pit (Southern side of biodigester) and soil sample taken from the lemon farm (D/S of Kaccha Pit, Eastern side of biodigester) reveals that it contains low percentage of organic carbon (0.27% and 0.39%), moderately high concentration of phosphorous (27 Kg/ha and 27 Kg/ha) and very high concentration of potassium (3017 Kg/ha and 449 Kg/ha) respectively.

- Soil sample collected at location no. 7 i.e. at two different depths i.e. soil sample taken from the maize farm (D/S of Kaccha Pit, Southern side of biodigester) reveals that it contains medium percentage of organic carbon (0.44% and 0.56%), very high concentration of phosphorous (39 Kg/ha and 73 Kg/ha) and potassium (1028 Kg/ha and 1893 Kg/ha) respectively.

- Soil sample collected at location no. 8 i.e. at three different depths i.e. soil samples taken from the downstream of compost yard reveals that it contains medium to very low percentage of organic carbon (0.57%, 0.54% and 0.18%), high to very high concentration of phosphorous (31 Kg/ha, 45 Kg/ha and 45 Kg/ha) and high to very high concentration of potassium (293 Kg/ha, 263 Kg/ha and 447 Kg/ha) respectively.

- S. K. Rajkishore and N. S. Vignesh in the review article entitled “Distillery Spentwash in the Context of Crop Production – A Review” mentioned that heavy dose of application of organic carbon due to distillery waste disposal may cause high oxygen demand by bacterial activity under anaerobic condition, which will in turn cause a decrease in infiltration rate and a reduction in hydraulic conductivity due to accumulation of solids. Also, high concentration of potassium results in the decreased hydraulic conductivity of soils. An increase in electrical conductivity was reported after application of distillery effluent to agriculture fields. It is a fact on record that the all the soil samples collected are reported with high concentration of electrical conductivity except the reference soil sample (wherein it is reported electrical conductivity of 0.32 dS/m and 0.2 dS/m) and the soil sample collected at location no. 6 (wherein it is reported electrical conductivity of 0.71 dS/m and 0.42 dS/m) respectively. The high concentration of electrical conductivity results in restriction of yield of crops.

4.0 CONCLUSIONS

(i) As per Excise register, the industry started its distillery operation w.e.f. 02.11.2020 and as per the record of Police Department accident happened on 21.11.2020. The average production of ethyl alcohol is 28.123 m^3/day against the consented capacity of 30 m^3/day and corresponding daily spent wash

generation is 280 to 295 m^3/day. Total spent wash generated w.e.f. 02.11.2020 to 21.11.2020 is about 5,600 m^3

(ii) The industry has violated by not stabilizing the biodigester using organic matter, active culture, etc. prior to the operation of the distillery unit and hence was not having necessary preparedness to meet the required treatment of spent wash prescribed under the consent issued by MPCB.

(iii) The industry has provided two 5 days and 30 days spent wash impervious (concrete) lagoons of 1,500 and 9,000 m^3 capacity, respectively as per conditions of CREP norms and Environmental Clearance dated 19.05.2008. However, it is gathered that 30 days spent wash impervious (concrete) lagoon was found filled with raw spent wash of 3,380 m^3 without treatment in the biodigester. Hence the industry is non-complied w.r.t. specific conditions of S. no. viii of the Environment Clearance (EC) granted by MoEF&CC vide F.no. J-11011/473/2006-IA-II (I), dated 19.05.2008.

(iv) As per CC&A conditions, the industry has provided biodigester for the treatment of distillery effluent @ 295 m^3/day followed by bio-composting on 7.5 acre of land to achieve ZLD conditions. The design capacity of biodigester is 400 m^3/day and the volumetric design capacity of biodigester is 9,600 m^3. The biodigester was filled with previous season's (i.e. 2018-19) spent wash of 5,780 m^3 i.e. ~60% of biodigester capacity and present season's (w.e.f. 02.11.2020 to 21.11.2020) fresh spent wash of 720 m^3, which amounts to be total 6,500 m^3 of spent wash in the biodigester.

(v) After the accident, the aforesaid 6,500 m^3 of spent wash from the biodigester has reportedly been spread within the industry premises. The spilled area has been reported of about 06 acres and their approx. break-ups are as below:

(a) Bagasse yard: 1 acre;
(b) Mango orchard: 1 acre;
(c) Bio-compost yard: 1 acre;
(d) Distillery premises: 1 acre, and;
(e) Cane yard: 2 acres

However, the areas of excavated earthen pits, drains/nalah and constructed bunds may also have been affected due to contact with spent wash. Details of the same have not yet been accounted by the industry.

(vi) Approximately 4,400 m^3 of spent wash was re-collected by excavating two nos. of temporary earthen pits and in addition to 600 m^3 of spent wash was re-collected from the nalah by constructing temporary bunds.

It has also been reported that spilled spent wash did not escape from the industry premises due to containment of the spent wash by constructing the said temporary pits and bunds.

(vii) The re-collected spent wash in the tune of 5,000 m^3 was pumped and stored in the existing 30 days spent wash impervious (concrete) lagoon of 9,000 m^3 capacity. The details of spent wash storage in the said lagoons are as below:

Item	**Spent wash storage and utilization**					
	Prior to accident on 02.11.2020			**After the accident and collection of spilled spent wash**		
	05 days lagoon	**Bio-digester**	**30 days lagoon**	**05 days lagoon**	**Bio-digester**	**30 days lagoon**
Spent Wash stored (in m^3)	1,500	5,780 + 720 = 6500	3,380 as raw spent wash and bypassed without imparting bio-methanation	1,500	Not applicable	3,380 + 5,000 = 8,380
spent wash utilized (in m^3)	3,568 spent wash was utilized for preparation of bio-compost along with press mud @ 1: 0.42 (1 MT of press mud requires 0.42 m^3 of spent wash. Hence, total 8,480 MT of press mud was consumed.			6,312 spent wash was utilized for preparation of bio-compost along with press mud @ 1: 0.42 (1 MT of press mud requires 0.42 m^3 of spent wash. Hence, total 15,001 MT of press mud was consumed.		
net spent available (in m^3)	Out of 11,380 total spent wash, 9,880 spent wash was utilized for preparation of bio-compost and 1,500 spent wash was recovered/re-collected as soil-soaked spent wash and utilized as soil amendment for the preparation of bio-compost.					

(viii) The remaining spilled spent wash of about 1,500 m^3 either seeped into soil or evaporated or both at the aforesaid affected areas.

(ix) Top surface i.e. 10 cm of the soil was scrapped from the said affected area of about 6 acres and also from the nalah Quantity of the said top layer excavated soil contaminated with spent wash has been reported to be total of about 5,750 MT.

(x) It is informed by the industry that after the accident, proportionating of spent wash contaminated soil was done @ 20% along with the spent wash and press mud to prepare bio-compost. Accordingly, the industry has utilized 6,312 m^3 of spent wash, 15,001 MT of press mud, 750 MT of boiler ash and 4,696.2 MT of spent wash contaminated soil to prepare the bio-compost. Whereas, as per the above information, proportionating of spent wash contaminated soil was done @ 31.3% along with the spent wash and press mud to prepare bio-compost.

(xi) The produced Bio-compost samples were analysed only for pH, colour, odour, electrical conductivity, particle size, total nitrogen, potassium, phosphorous, C/N ratio, moisture content, bulk density and total organic carbon. Whereas other prescribed parameters i.e. total heavy metals (As, Cd, Cr, Cu, Pb, Hg, Ni & Zn) were not analysed. Hence, the industry has non-complied w.r.t. the Office Memorandum of MoEF&CC vide F.No. J-11013/55/2017-IA-II (I), dated 04.09.2018.

(xii) The analysis results of the produced compost reveal that not all the parameters have been analyses as applicable under the FCO standards. However, all the measured parameters are above the minimum required values or within the prescribed limits prescribed under FCO standards except electrical conductivity and moisture. The same were found to be 9.54 dS/m & 9.12 dS/m and 38% & 32% which are higher than the prescribed maximum limit of 4 dS/m and 25% prescribed for organic manure under the FCO standard.

(xiii) The industry has not yet provided the data on total quantity of bio-compost produced prior to the accident and also data on total quantity of bio-compost produced after the accident, their current storage in the premises and quantity sold.

(xiv) Soil samples were collated from 8 different locations of the spent wash spilled affected areas due to the accident and also from one area not having any impact due to the accident as reference/background soil sample.

(xv) Analysis results of 8 soil samples taken from the spent wash spilled affected areas and the reference soil samples taken from non-impacted area reveal that, except pH and CEC, all the measured parameters (viz. electrical conductivity, organic carbon, available nitrogen, phosphorous, potassium, sulphur and sodium absorption ratio) have higher concentration in the spent wash spilled affected area when compared with the reference soil samples collected at surface level and at 20 cm and 40 cm depths. It may, therefore, be inferred that the affected spent wash spilled area still has impact of spent wash despite excavation of 10 cm soil after the spill. The concentration of such parameters was found to be significantly high at soil sampling locations S3, S4, S5 and S8 [viz. opp. distillery gate (North-eastern side of biodigester), Southern side of biodigester, Bitale Mohol Road, Near Kaccha Pit (Southern side of biodigester) and downstream of compost yard where bund was constructed].

5.0 RECOMMENDATIONS

In view of the observations/findings that:

(i) surface soil and soil samples taken from 20 cm to 40 cm depth of the spent wash spilled affected areas have higher electrical conductivity and higher percentage of organic content, higher concentration of nitrogen, phosphorous and potassium (even after scrapping of 10 cm top soil layer) to that of unaffected soil samples indicating that there still exists impacts on soil;

(ii) no study has been conducted to assess impact on soil & other receptors due to higher concentration as (i) above and remedial measures required thereof;

There is immediate need of carrying out detailed studies and take short-term measures to contain further impact, if any. The committee, therefore, recommends the following as immediate measures:

1. A detailed study shall be conducted through reputed institute like College of Engineering, Pune/ Mahatma Phule Krishi Vidyapeeth, Pune/etc. to prepare Detailed Project Report (DPR) which may include:

(a) delineation of impacted area due to spillage of spent wash including pits/drains/nallahs/bunds;

(b) detailed soil characteristics analysis/investigation with assessment of soil qualities in the affected areas and depth levels to which the same are affected;

(c) The soil samples beneath the ground surface (up to 50 cm) should also be collected around 1 m from periphery of the affected area as after percolation, the wastewater will travel horizontally so the actual affected area needs to be determined.

(d) receptors and pathways analysis;

(e) requirement of remediation, if any, based on the above receptors and pathways analysis;

(f) In case remediation is required, details of required remediation treatment such as in-situ treatment (bio-remediation/phyto-remediation/air purging/etc.) or off-site treatment (soil excavation and management of excavated soil) along with engineering details & time period and cost thereof with expected target quality/goals in terms of various parameters of concern.

(g) Feasibility of utilizing the remaining 1,053.8 MT of excavated contaminated soil in bio-compost making ensuring compliance of all parameters stipulated under FCO standards. In case bio-composting is not feasible, details of alternate management options of the same be also provided.

The above studies be completed as early as possible preferably within two months and initiate necessary required remedial measures. A brief write-up on soil characteristics and removal mechanism of pollutants present in spilled spent wash is given at **Annexure-II** which may be helpful in preparing the said DPR.

2. Till the above DPR is prepared and suggested remedial measures therein are implemented, necessary arrangement shall be made for temporary cover of the spilled spent wash affected area during rain/monsoon, wherever feasible. Otherwise, the runoff shall be contained by constructing suitable bunds/ periphery drains at slopes in the affected areas and preventing discharge of run-offs from the industry premises by channelizing & storing the collected run-offs to the 5 days or 30 days storage lagoons. In case expected run-off (based on local monsoon data) is more than the installed capacities of lagoons, a guard pond be constructed for the same.

   The contained water in lagoons/guard pond be analysed for various parameters as prescribed applicable for general standards for discharge of environmental pollutants notified under the Environment (Protection) Act, 1986, and be managed accordingly as per directions of MPCB.

3. The industry should ensure to store the previously scrapped spent wash contaminated soil and the spent wash contaminated soil which is scrapped from the affected areas in an environmentally sound manner i.e. the spent wash contaminated soil should be stored and stockpiled under the covered shed on the impervious layer in order to prevent the leaching form the soil during monsoon season.

4. The industry shall provide information on total quantity of bio-compost produced prior to the accident and also data on total quantity of bio-compost produced after the accident, their current storage in the premises and quantity sold.
   The compost shall not be sold/used until the same meets the prescribed FCO standards.

5. The industry should provide adequate leachate collection facility around the compost plant and leachate be collected and stored in 30 days storage lagoons followed by management of the same as per the norms.

6. Ground water quality monitoring in and around the industry premises shall be monitored at least two times year (pre-monsoon and post-monsoon) for a minimum period of 2 to 3 years. The no. of monitoring wells in and around the industry premises should be near as far as possible, at least 03 no. of monitoring wells should be so selected.

7. The industry shall inventorise plants/greeneries damaged due to the accident and shall substantiate the same.

(Milind Shambharkar)
Collector & Dist. Magistrate,
Solapur

(Suresh Kumar Adapa)
Scientist D,
MoEF&CC Nagpur

(Bharat K. Sharma)
Regional Director,
CPCB Regional Directorate
Pune

(Prof. Anurag Garg)
IIT Bombay, Mumbai

(Dr. S. Ghuge)
Principal Scientist,
NEERI Nagpur

(Nitin Shinde)
Regional Officer,
MPCB Pune

*****

Annexure- I

LokneteBaburao Patil Agro Industries Ltd. Laxminagar, Angar, Tal. Mohol, Dist. Solapur 413 214.

Spentwash recovery Details.(05 Dec-2020 to 11 Dec-2020)

Sr.No	Date	Vehicle No	Capacity ofVehicle	Total Trips	Total
1	5/12/2020	MH-06-AC-6899	20000	6	120000
2	5/12/2020	MH-12-EF-8908	20000	7	140000
3	5/12/2020	MH-45-599	20000	5	100000
4	5/12/2020	MH-43-E-146	20000	4	80000
5	5/12/2020	MH-12-FC-8071	20000	6	120000
6	5/12/2020	MH-25-5601	7000	7	49000
7	5/12/2020	MH-06-G-6786	2500	6	15000
				Total	**624000**
1	6/12/2020	MH-06-AC-6899	20000	6	120000
2	6/12/2020	MH-12-EF-8908	20000	7	140000
3	6/12/2020	MH-45-599	20000	6	120000
4	6/12/2020	MH-43-E-146	20000	8	160000
5	6/12/2020	MH-12-FC-8071	20000	6	120000
6	6/12/2020	MH-25-5601	7000	7	49000
7	6/12/2020	MH-06-G-6786	2500	9	22500
				Total	**731500**
1	7/12/2020	MH-06-AC-6899	20000	7	140000
2	7/12/2020	MH-12-EF-8908	20000	6	120000
3	7/12/2020	MH-45-599	20000	8	160000
4	7/12/2020	MH-43-E-146	20000	7	140000
5	7/12/2020	MH-12-FC-8071	20000	5	100000
6	7/12/2020	MH-25-5601	7000	6	42000
7	7/12/2020	MH-06-G-6786	2500	7	17500
				Total	**719500**
1	8/12/2020	MH-06-AC-6899	20000	5	100000
2	8/12/2020	MH-12-EF-8908	20000	7	140000
3	8/12/2020	MH-45-599	20000	8	160000
4	8/12/2020	MH-43-E-146	20000	6	120000
5	8/12/2020	MH-12-FC-8071	20000	7	140000
6	8/12/2020	MH-25-5601	7000	8	56000
7	8/12/2020	MH-06-G-6786	2500	7	17500
				Total	**733500**
1	9/12/2020	MH-06-AC-6899	20000	6	120000
2	9/12/2020	MH-12-EF-8908	20000	6	120000
3	9/12/2020	MH-45-599	20000	8	160000
4	9/12/2020	MH-43-E-146	20000	6	120000
5	9/12/2020	MH-12-FC-8071	20000	7	140000
6	9/12/2020	MH-25-5601	7000	8	56000
7	9/12/2020	MH-06-G-6786	2500	7	17500
				Total	**733500**
1	10//12/2020	MH-06-AC-6899	20000	5	100000

2	10//12/2020	MH-12-EF-8908	20000	6	120000
3	10//12/2020	MH-45-599	20000	8	160000
4	10//12/2020	MH-43-E-146	20000	6	120000
5	10//12/2020	MH-12-FC-8071	20000	7	140000
6	10//12/2020	MH-25-5601	7000	7	49000
7	10//12/2020	MH-06-G-6786	2500	8	20000
				Total	**709000**
1	11/12/2020	MH-06-AC-6899	20000	6	120000
2	11/12/2020	MH-12-EF-8908	20000	7	140000
3	11/12/2020	MH-45-599	20000	6	120000
4	11/12/2020	MH-43-E-146	20000	7	140000
5	11/12/2020	MH-12-FC-8071	20000	8	160000
6	11/12/2020	MH-25-5601	7000	7	49000
7	11/12/2020	MH-06-G-6786	2500	8	20000
				Total	**749000**
Total recovery of Spent wash = 5000000/- liters (5000 m3)					

LokneteBaburao Patil Agro Industries Ltd. Laxminagar, Angar, Tal. Mohol, Dist. Solapur 413 214.			
Scrapping Soil Collection Details.(06 Dec-2020 to 11 Dec-2020)			
Sr.No	Date	Tipar No	Total Trips
1	6/12/2020	MH-25-GC-521	15
2	6/12/2020	MH-04-FD-8164	14
3	6/12/2020	MH-25-B-7940	10
4	6/12/2020	MH-25-520	8
5	6/12/2020	MH-25-9799	8
Total			**55**
1	7/12/2020	MH-25-GC-521	15
2	7/12/2020	MH-04-FD-8164	16
3	7/12/2020	MH-25-B-7940	14
4	7/12/2020	MH-25-520	15
5	7/12/2020	MH-25-9799	15
Total			**75**
1	8/12/2020	MH-25-GC-521	17
2	8/12/2020	MH-04-FD-8164	16
3	8/12/2020	MH-25-B-7940	15
4	8/12/2020	MH-25-520	17
5	8/12/2020	MH-25-9799	16
Total			**81**
1	9/12/2020	MH-25-GC-521	18
2	9/12/2020	MH-04-FD-8164	17
3	9/12/2020	MH-25-B-7940	15
4	9/12/2020	MH-25-520	16
5	9/12/2020	MH-25-9799	17
Total			**83**

75259/2022/TECH-RD (Pune)

1	10/12/2020	MH-25-GC-521	20
2	10/12/2020	MH-04-FD-8164	15
3	10/12/2020	MH-25-B-7940	13
4	10/12/2020	MH-25-520	15
5	10/12/2020	MH-25-9799	18
Total			**81**
1	11/12/2020	MH-25-GC-521	21
2	11/12/2020	MH-04-FD-8164	19
3	11/12/2020	MH-25-B-7940	20
4	11/12/2020	MH-25-520	21
5	11/12/2020	MH-25-9799	18
Total			**99**
TotalTrips			**474**

This is for your information and kind consideration.

Thanking you.
Yours faithfully,

(O.S.Jogade)
CHIEF EXECUTIVE OFFICER

Copy to : SRO, MPCB,Solapur

Annexure- II

A BRIEF WRITE-UP ON SOIL CHARACTERISTICS AND REMOVAL MECHANISM OF POLLUTANTS PRESENT IN SPILLED SPENT WASH

(A) Soil Type and its characteristics

In Mohol Tahshil, the soil type is classified as black cotton soil (URL 01). In this region, the soil depth is 22.5 cm – 90 cm (i.e., medium deep soil) (URL02; District Survey Report, 2018). Below this depth rock formation may be expected. Generally, soils are usually low in total nitrogen, low to medium in available phosphorous and high in available potash. The normal rainfall in this region is 575 mm (URL 03). In general, the soil formation is clayey loam in texture with equally high in calcium carbonate. It is highly poros however its permeability is moderate to low. Due to which it has low to moderate infiltration capacity. Water infiltration is highly dependent on two soil water conductivity and soil absorptivity. It decreases with increase in moisture content.

Water retention capacity of soils of Mohol Agricultural Research Station, Solapur are reported by Durgude et al. (2004). At the 6 sampling locations, clay and silt constituted 56-95% of the total particles. Only at two locations, ~44% sand particles were present. The permeability of this type of soil can be considered as 10^{-7} m/s (i.e., 0.0864 m/d) (URL 04). Theoretically, the wastewater will take around 105 days (i.e., 3.5 months) to percolate 90 cm depth (maximum limit of medium deep soil). However, as mentioned above the actual percolation rate is likely to be much slower hence it is expected to take much longer than 105 days. The prediction of exact duration of wastewater percolation is difficult due to following reasons:

- Non-uniform sub-surface soil profile (e.g., rock may appear at much lower depth beneath the ground level).
- The solids present in the spilled distillery spent wash may block the pores of soil which will further reduce the seepage of water.
- The ground water level in Mohol Tahsil is 2.8 m below ground level in post-monsoon season (as per the information provided by MPCB). In the view of

above discussion, it can be deduced that the chances of wastewater mixing with groundwater is very low.

- **Hence, the infiltration capacity of the contaminated soil measurement may be helpful in understanding the percolation rate of wastewater and be compared with that of uncontaminated soil in the same region. The standard Double Ring Infiltrometer method may be used to measure the infiltration capacity. The reference for this method is as follows:**

ASTM Standards, Standard Test Method for Infiltration Rate of Soils in Field Using Double-Ring Infiltrometer. D: 3385 – 9403

(B) Removal mechanisms of Pollutants present in spilled spent wash

Various organic and inorganic pollutants present in the wastewater can be removed or transformed by several mechanisms:

Volatilization – Some volatile organics present in the spent wash may volatilize when exposed to atmosphere. Higher contact area between ground surface and atmosphere may increase the rate of volatilization.

Filtration/screening – the impurities larger than the pore size of soil will be removed by filtration.

Precipitation – The pH of soil water may remove some dissolved inorganics by forming their insoluble precipitates.

Adsorption - Some dissolved organic as well as inorganic impurities may be adsorbed on the clay particles. Though some compounds may be desorbed after converting into non-adsorbable compound by some transformation mechanism.

Chemical oxidation – A fraction of complex organic compounds may be converted into lower molecular weight compounds due to the presence of oxidizing agent (e.g., oxygen though in low concentrations may be initially present in water).

Ion-exchange process – Some of the inorganic cations may be removed by replacing sodium ions present in soil.

Microbial degradation – The indigenous microbes present in soil may play an important role in the removal of various dissolved/ adsorbed organic or inorganic impurities.

However, lateral and vertical movement is likely to occur, hence commenting on the impact on quality of sub-surface water (in vadose zone) or in dug wells is difficult. **Therefore, it may be helpful to conduct a study for monitoring sub-surface water quality (particularly in unconfined aquifer) by identifying appropriate number of observation wells near the site.**

References:

URL 01:
http://environmentclearance.nic.in/writereaddata/District/surveyreport/041020187BMFWJKTFINALDMPINTERATGLANCE2.pdf (Accessed on 9th June 2021)

URL02: District Survey Report, 2018.
https://cdn.s3waas.gov.in/s3acc3e0404646c57502b480dc052c4fe1/uploads/2018/09/2018090491.pdf (Accessed on 9th June 2021)

URL 03:

http://cgwb.gov.in/AQM/NAQUIM_REPORT/Maharshtra/Karmala,%20Madha,%20Malshiras,%20Mohol,%20Pandharpur,%20South%20solapur,%20Solapur%20District.pdf (Accessed on 9th June 2021)

A. G. Durgude, V. K. Kharche and J. D. Patil. Water retention characteristics of soils of Mohol Agricultural Research Station, Solapur, Maharashtra. Agropedology 2004, 14(1), 60-64.

URL 04:
http://www.fao.org/fishery/docs/CDrom/FAO_Training/FAO_Training/General/x6706e/x6706e09.htm (Accessed on 9th June 2021)

Annexure-III

Item No. 03 (Court No.1)

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

(By Video Conferencing)

Original Application No. 274/2020

(With report dated 28.07.2021)

In re: News item published in the "Indian Express" dated 23.11.2020 entitled "Maharashtra: Two Killed, eight injured in methane gas leak in sugar factory"

Date of hearing: 16.08.2021

CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON
HON'BLE MR. JUSTICE SUDHIR AGARWAL, JUDICIAL MEMBER
HON'BLE MR. JUSTICE BRIJESH SETHI, JUDICIAL MEMBER
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER

Respondent: Mr. Raj Kumar, Advocate for CPCB
Mr. Mukesh Verma, Advocate for MPCB
Mr. R.B. Mahabal, Advocate for Lokenete Bapurao Patil Agro Industries Ltd.

ORDER

1. Proceedings in this matter have been initiated on the basis of media report of deaths and injuries on account of methane gas leak in a sugar factory called Lokenete Bapurao Patil Agro Industries Ltd. in Mohol Taluka of Solapur District, Maharashtra on 21.11.2020.

2. The matter was earlier dealt with vide order dated 18.12.2020. After notice of the proceedings to the statutory authorities and the industry in question and after considering the pleadings of the parties, the Tribunal held that there was clear nexus of the death of two persons with the activities of the factory which entitled the heirs of the deceased to compensation. It was further held that apart from remedial measures for restoration of the environment, there was need to identify measures to prevent reoccurrence of such incidents in future. The operative part of the order is reproduced below:-

9. From the material on record, it is clear that the unit is engaged in producing and dealing with the methane and ethanol which are covered by the Manufacture, storage and Import of Hazardous Chemicals Rules, 1989. The Rules require the occupier of the industrial activity inter-alia to prepare an on-site emergency plan which should include mock-drill every six months. There is also requirement to prepare an off-site emergency plan by the Authority. ***It is not shown by any of the parties whether this aspect has been looked into and whether there is compliance of this mandate****. Learned counsel for the industrial unit submitted that the location where the accident took place is outside the manufacturing area. However, definition of "site", under Rule 2(m), includes whole area under the control of the occupier. The said Rule is as follows:*

> ***"2. Definitions.***
>
> ***xxx xxx xxx***
>
> *(m) "site" means any location where hazardous chemicals are manufactured or processed, stored, handled, used, disposed of and* ***includes the whole of an area under the control of an occupier*** *and includes pier, jetty or similar structure whether floating or not;"*

10. ***The accident has clear nexus to the activities of the occupier. Though two persons have died, compensation claimed to have been paid (@ Rs. 10 lakhs each to the kins of the deceased), is highly inadequate by any standard, either as per the parameters of the Workmen Compensation Act, 1923 or under the common law. The object of compensation is to place the victim in the position which he would have been, but for the incident. The principle of 'Absolute Liability' applies to such cases, as per law laid down by the Hon'ble Supreme Court in M.C Mehta v. Union of India, (1987) 1 SCC 395. There is also failure to comply with the mandate of statutory rules in mainlining safety norms and compensation is required to be paid for damage to the environment, which may need to be assessed. There is also need to have authentic report about the facts on the spot.***

11. The Tribunal has recently dealt with the issue of Industrial Safety and accountability for such failures in terms of compensating the victims, restoring the environment and taking preventive measures for future.

i. Order dated 01.06.2020, relating to incident of gas leak dated 07.05.2020 in ***LG Polymers India Pvt. Limited*** *at Vishakhapatnam, resulting in death of 11 persons and injuries to more than 100, apart from other damage[1];*

ii. Order dated 08.06.2020, relating to incident dated 03.06.2020 in a chemical factory, ***Yashyashvi Rasayan Pvt. Ltd****. at*

[1] OA No. 73/2020, In re: Gas Leak at LG Polymers Chemical Plant in RR Venkatapuram Village Visakhapatnam in Andhra Pradesh

Dahej, District Bharuch, Gujarat resulting in deaths and injuries and other damage[2];

iii. *Order dated 02.07.2020, in relation to incident of **oil well blow out on 27.05.2020 at Baghjan in the Tinsukia District of Assam** resulting in deaths, injuries and damage to the environment[3].*

iv. *Order dated 06.07.2020, relating to incident dated 30.06.2020 on account of gas leakage at **Sainor Life Sciences** factory at Parawada in industrial area on the outskirts of Vishakhapatnam[4];*

v. *Order dated 06.07.2020, relating to accident of **Ammonia gas leakage** at **Nandyal in Kurnool District, Andhra Pradesh in Spy Agro Industry** on 26.06.2020 resulting in death of one person and injury to three workers.[5]*

vi. *Order dated 08.07.2020, dealing with the incident dated 01.07.2020 resulting in death of 6 person and injury to 17 due to blast of boiler in **M/s Neyveli Thermal Power Station** (NLCIL), Cuddalore[6] and;*

vii. *Order dated 23.07.2020, in relation to incident of **fire engulfed the chemical plant** of **Visakha Solvents Ltd**, Vizag on 13.07.2020 at Ramky CETP Solvents building in Pharma City resulting in injuries[7].*

viii. *Order **dated 18.12.2020**, in relation to incident of **explosion in a plastic recycling factory at Sujapur in Malda on 1.12.2020** resulting in death of six persons, including two minors and serious injuries to four persons [8].*

*12. **The Tribunal constituted Committees of Experts in first seven cases to find out the sequence of events, persons responsible, extent of damage, steps to be taken for restoration and other remedial measures. In the present case also, it needs to be done.***

13. Accordingly, in the present case also we constitute a six-member Expert committee comprising the MoEF&CC, CPCB, State PCB, NEERI, Nagpur, IIT, Mumbai and the District Magistrate, Solapur. The State PCB will be the nodal agency for coordination and compliance. The District Magistrate, Solapur may extend all logistic support for functioning of the Committee. The Committee may meet physically or by video conferencing and may also undertake visit the site and give a report on the following:

a. *The sequence of events;*
b. *Causes of failure and persons and authorities responsible therefor;*

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2 OA No. 22/2020(WZ) (Earlier OA 22/2020)(wz), Aryavart Foundation through its President vs. Yashyashvi Rasayan Pvt. Ltd. & Anr.

3 OA No. 43/2020(EZ), Bonani Kakkar vs. Oil India Limited & Ors.

4 OA No. 106/2020, News item published in the local daily "Economic Times" dated 30.06.2020 titled "Another Gas Leakage at Vizag Factory kills two, critically injures four…"

5 OA No. 107/2020, In Re: News item published in the local daily "Indian Express Sunday Express" dated 28.06.2020 titled "Gas Leak in Agro Company Claims life of one"

6 OA No. 108/2020, News item published in the "Indian Express" dated 01.07.2020 titled "Tamil Nadu Neyveli boiler blast: 6 dead, 17 injured"

7 OA No. 134/2020, News item published on 13.07.2020 in the local daily named "India Today" titled "Massive fire engulf Vizag chemical plant, explosions heard, injuries reported"

8 OA No. 272/2020, News item published in the "Times of India" dated 20.11.2020 entitled "Six killed as blast tears through Malda Pastic recycling factory"

c. *Extent of damage to life, human and non-human; public health; and environment – including, water, soil, air;*
d. *Steps to be taken for compensation to victims and restitution of damaged property and environment, including the land, soil, groundwater and surface water, and the cost involved;*
e. *Remedial measures to prevent recurrence;*
f. *Any other incidental or allied issues found relevant.*

14. The Committee may also suggest guidelines for safety measures to be adopted in the setting up and maintenance of biodigesters. The Committee may also consider reports furnished in incidents in first seven cases, mentioned in Para 11 above which are available with the CPCB. The Committee will be at liberty to associate any other expert or institution. The Committee may interact with all concerned stakeholders. The Committee may give its report within three months sent by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/ OCR Support PDF and not in the form of Image PDF.

15. Vide order dated 08.06.2020 in O.A. No. 22/2020 (WZ), Aryavart Foundation through its President v. Yashyashvi Rasayan Pvt. Ltd. and Anr., we determined the interim compensation at Rs. 15 lakhs in the case of death, Rs. 5 lakhs in the case of serious injury and Rs. 2.5 lakhs to any other injured as follows:

> *"6. … we assess interim compensation for death to be 15 lacs each (taking into account multiplier of around 16 and loss of earning of about one lac a year, taking the minimum wage, apart from conventional sums), for grievous injury Rs. 5 lac per person, for other injuries of persons hospitalized Rs. 2.5 lac per person and for displacement at Rs. 25000/- per person."*

16. Accordingly, the said scale needs to be applied to the present case. Final compensation may be suggested by the Committee, including for restoration of environment. The industrial unit may deposit appropriate amount to cover interim compensation (deficit amount remaining to be paid) with the District Magistrate within one month, failing which, the District Magistrate may recover the same by coercive measures, as per law. The District Magistrate may ensure disbursement of the amount of interim compensation to the victims, excluding the payment already made. We request the District Legal Authority, Solapur to provide assistance to the victims in accessing legal remedies. ***This order will be without prejudice to liability under the Criminal Law."***

3. In pursuance of above, the six members Expert Committee has given its interim report, filed on 28.07.2021. The report notes the failure of the factory in observing safeguards leading to damage to the soil and deals with the environmental impact of spent wash on soil environment and remedial measures to be adopted in terms of restoration steps and

preventive safeguards. The Committee has also suggested a further detailed study to prepare DPR for remedial action.

4. The relevant extracts from the report are reproduced below. The conclusions and the recommendations in the report are as follows:-

"4.0 CONCLUSIONS

(i) As per Excise register, the industry started its distillery operation w.e.f. 02.11.2020 and as per the record of Police Department accident happened on 21.11.2020. The average production of ethyl alcohol is 28.123 m^3/day against the consented capacity of 30 m^3/day and corresponding daily spent wash generation is 280 to 295 m^3/day. Total spent wash generated w.e.f. 02.11.2020 to 21.11.2020 is about 5,600 m^3.

(ii) The industry has violated by not stabilizing the biodigester using organic matter, active culture, etc. prior to the operation of the distillery unit and hence was not having necessary preparedness to meet the required treatment of spent wash prescribed under the consent issued by MPCB.

(iii) *The industry has provided two 5 days and 30 days spent wash impervious (concrete) lagoons of 1,500 and 9,000 m^3 capacity, respectively as per conditions of CREP norms and Environmental Clearance dated 19.05.2008. However, it is gathered that 30 days spent wash impervious (concrete) lagoon was found filled with raw spent wash of 3,380 m^3 without treatment in the biodigester.* ***Hence the industry is non-complied w.r.t. specific conditions of S. no. viii of the Environment Clearance (EC) granted by MoEF&CC vide F.no. J-11011/473/2006-IA-II (I), dated 19.05.2008.***

(iv) As per CC&A conditions, the industry has provided biodigester for the treatment of distillery effluent @ 295 m^3/day followed by bio-composting on 7.5 acre of land to achieve ZLD conditions. The design capacity of biodigester is 400 m^3/day and the volumetric design capacity of biodigester is 9,600 m^3. The biodigester was filled with previous season's (i.e. 2018-19) spent wash of 5,780 m3 i.e. ~60% of biodigester capacity and present season's (w.e.f. 02.11.2020 to 21.11.2020) fresh spent wash of 720 m^3, which amounts to be total 6,500 m^3 of spent wash in the biodigester.

(v) *After the accident, the aforesaid 6,500 m^3 of spent wash from the biodigester has reportedly been spread within the industry premises.* ***The spilled area has been reported of about 06 acres and their approx. break-ups are as below:***

(a) Bagasse yard: 1 acre;
(b) Mango orchard: 1 acre;

(c) Bio-compost yard: 1 acre;
(d) Distillery premises: 1 acre, and;
(e) Cane yard: 2 acres

However, the areas of excavated earthen pits, drains/nalah and constructed bunds may also have been affected due to contact with spent wash. Details of the same have not yet been accounted by the industry.

(vi) Approximately 4,400 m3 of spent wash was re-collected by excavating two nos. of temporary earthen pits and in addition to 600 m3 of spent wash was recollected from the nalah by constructing temporary bunds.

It has also been reported that spilled spent wash did not escape from the industry premises due to containment of the spent wash by constructing the said temporary pits and bunds.

(vii) The re-collected spent wash in the tune of 5,000 m^3 was pumped and stored in the existing 30 days spent wash impervious (concrete) lagoon of 9,000 m3 capacity. The details of spent wash storage in the said lagoons are as below:

Item	**Spent wash storage and utilization**					
	Prior to accident on 02.11.2020			**After the accident and collection of spilled spent wash**		
	05 days lagoon	**Bio-digester**	**30 days lagoon**	**05 days lagoon**	**Bio-digester**	**30 days lagoon**
Spent Wash stored (in m^3)	1,500	5,780 + 720 = 6500	3,380 as raw spent wash and bypassed without imparting bio methanation	1,500	Not applicable	3,380 + 5,000 = 8,380
spent wash utilized (in m^3)	3,568 spent wash was utilized for preparation of bio-compost along with press mud @ 1: 0.42 (1 MT of press mud requires 0.42 m^3 of spent wash. Hence, total 8,480 MT of press mud was consumed.			6,312 spent wash was utilized for preparation of bio-compost along with press mud @ 1: 0.42 (1 MT of press mud requires 0.42 m^3 of spent wash. Hence, total 15,001 MT of press mud was consumed.		
net spent available (in m^3)	Out of 11,380 total spent wash, 9,880 spent wash was utilized for preparation of bio-compost and 1,500 spent wash was recovered/re-collected as soil-soaked spent wash and utilized as soil amendment for the preparation of bio-compost.					

(viii) The remaining spilled spent wash of about 1,500 m3 either seeped into soil or evaporated or both at the aforesaid affected areas.

(ix) Top surface i.e. 10 cm of the soil was scrapped from the said affected area of about 6 acres and also from the nalah Quantity of the said top layer excavated soil contaminated with spent wash has been reported to be total of about 5,750 MT.

(x) *It is informed by the industry that after the accident, proportionating of spent wash contaminated soil was done @ 20% along with the spent wash and press mud to prepare bio-compost. Accordingly, the industry has utilized 6,312 m3 of spent wash, 15,001 MT of press mud, 750 MT of boiler ash and 4,696.2 MT of spent wash contaminated soil to prepare the bio-compost.* ***Whereas, as per the above information, proportionating of spent wash contaminated soil was done @ 31.3% along with the spent wash and press mud to prepare bio-compost.***

(xi) *The produced Bio-compost samples were analysed only for pH, colour, odour, electrical conductivity, particle size, total nitrogen, potassium, phosphorous, C/N ratio, moisture content, bulk density and total organic carbon. Whereas other prescribed parameters i.e. total heavy metals (As, Cd, Cr, Cu, Pb, Hg, Ni & Zn) were not analysed.* ***Hence, the industry has non-complied w.r.t. the Office Memorandum of MoEF&CC vide F.No. J-11013/55/2017-IA-II (I), dated 04.09.2018.***

(xii) *The analysis results of the produced compost reveal that not all the parameters have been analyses as applicable under the FCO standards.* ***However, all the measured parameters are above the minimum required values or within the prescribed limits prescribed under FCO standards except electrical conductivity and moisture. The same were found to be 9.54 dS/m & 9.12 dS/m and 38% & 32% which are higher than the prescribed maximum limit of 4 dS/m and 25% prescribed for organic manure under the FCO standard.***

(xiii) *The industry has not yet provided the data on total quantity of bio-compost produced prior to the accident and also data on total quantity of bio-compost produced after the accident, their current storage in the premises and quantity sold.*

(xiv) *Soil samples were collated from 8 different locations of the spent wash spilled affected areas due to the accident and also from one area not having any impact due to the accident as reference/ background soil sample.*

(xv) ***Analysis results of 8 soil samples taken from the spent wash spilled affected areas and the reference soil samples taken from non-impacted area reveal that, except pH and CEC, all the measured parameters (viz. electrical conductivity, organic carbon, available nitrogen, phosphorous, potassium, sulphur and sodium absorption ratio) have higher concentration in the spent wash spilled affected area when compared with the reference soil samples collected at surface level and at 20 cm and 40 cm depths. It may, therefore, be inferred that the affected spent wash spilled area still has impact of spent wash despite excavation of 10 cm soil after the spill. The concentration of such parameters was found to be significantly high at soil sampling locations S3, S4, S5 and S8 [viz. opp. distillery gate (North-eastern side of***

biodigester), Southern side of biodigester, Bitale Mohol Road, Near Kaccha Pit (Southern side of biodigester) and downstream of compost yard where bund was constructed].

5.0 RECOMMENDATIONS

In view of the observations/findings that:

(i) surface soil and soil samples taken from 20 cm to 40 cm depth of the spent wash spilled affected areas have higher electrical conductivity and higher percentage of organic content, higher concentration of nitrogen, phosphorous and potassium (even after scrapping of 10 cm top soil layer) to that of unaffected soil samples indicating that there still exists impacts on soil;

(ii) no study has been conducted to assess impact on soil & other receptors due to higher concentration as (i) above and remedial measures required thereof;

There is immediate need of carrying out detailed studies and take short-term measures to contain further impact, if any. The committee, therefore, recommends the following as immediate measures:

1. A detailed study shall be conducted through reputed institute like College of Engineering, Pune/ Mahatma Phule Krishi Vidyapeeth, Pune/etc. to prepare Detailed Project Report (DPR) which may include:

(a) delineation of impacted area due to spillage of spent wash including pits/drains/nallahs/bunds;

(b) detailed soil characteristics analysis/investigation with assessment of soil qualities in the affected areas and depth levels to which the same are affected;

(c) The soil samples beneath the ground surface (up to 50 cm) should also be collected around 1 m from periphery of the affected area as after percolation, the wastewater will travel horizontally so the actual affected area needs to be determined.

(d) receptors and pathways analysis;

(e) requirement of remediation, if any, based on the above receptors and pathways analysis;

(f) In case remediation is required, details of required remediation treatment such as in-situ treatment (bio-remediation/phyto-remediation/air purging/etc.) or off-site treatment (soil excavation and management of excavated soil) along with engineering details & time period and cost thereof with expected target quality/goals in terms of various parameters of concern.

(g) Feasibility of utilizing the remaining 1,053.8 MT of excavated contaminated soil in bio-compost making ensuring compliance of all parameters stipulated under FCO standards. In case bio-composting is not feasible, details of alternate management options of the same be also provided.

The above studies be completed as early as possible preferably within two months and initiate necessary required remedial measures. A brief write-up on soil characteristics and removal mechanism of pollutants present in spilled spent wash is given at Annexure-II which may be helpful in preparing the said DPR.

2. *Till the above DPR is prepared and suggested remedial measures therein are implemented,* ***necessary arrangement shall be made for temporary cover of the spilled spent wash affected area during rain/monsoon, wherever feasible. Otherwise, the runoff shall be contained by constructing suitable bunds/ periphery drains at slopes in the affected areas and preventing discharge of run-offs from the industry premises by channelizing & storing the collected run-offs to the 5 days or 30 days storage lagoons. In case expected run-off (based on local monsoon data) is more than the installed capacities of lagoons, a guard pond be constructed for the same.***

The contained water in lagoons/guard pond be analysed for various parameters as prescribed applicable for general standards for discharge of environmental pollutants notified under the Environment (Protection) Act, 1986, and be managed accordingly as per directions of MPCB.

3. ***The industry should ensure to store the previously scrapped spent wash contaminated soil and the spent wash contaminated soil which is scrapped from the affected areas in an environmentally sound manner i.e. the spent wash contaminated soil should be stored and stockpiled under the covered shed on the impervious layer in order to prevent the leaching form the soil during monsoon season.***

4. ***The industry shall provide information on total quantity of bio-compost produced prior to the accident and also data on total quantity of bio-compost produced after the accident, their current storage in the premises and quantity sold.***

The compost shall not be sold/used until the same meets the prescribed FCO standards.

5. ***The industry should provide adequate leachate collection facility around the compost plant and leachate be collected and stored in 30 days storage***

lagoons followed by management of the same as per the norms.

6. Ground water quality monitoring in and around the industry premises shall be monitored at least two times year (pre-monsoon and post-monsoon) for a minimum period of 2 to 3 years. The no. of monitoring wells in and around the industry premises should be near as far as possible, at least 03 no. of monitoring wells should be so selected.

7. ***The industry shall inventorise plants/greeneries damaged due to the accident and shall substantiate the same."***

5. We have also received a report from the District Legal Services Authority dated 03.06.2021 on the subject of legal aid to the victims.

6. We have heard Learned Counsel for the parties.

7. Learned Counsel for the factory submitted that compensation in terms of order of this Tribunal dated 18.12.2020 has been paid and the factory has no objection to take remedial measures recommended in the interim report. The factory also has no objection to detailed study being conducted through a reputed Institute. However, the Institutes mentioned in the report are unable to undertake such studies.

8. Accordingly, while accepting the interim report, we issue directions in terms of the report. Further study in terms of recommendations of the Committee may be conducted by IIT Mumbai in coordination with such other Institutions/individuals as may be considered appropriate. The study may be completed within three months. The report of the IIT may be submitted to the Chairman State PCB. Final report of the Committee may also be submitted to the Chairman State PCB within three months. The Committee may also look into the monitoring of ground water in context of leaching of spent wash and piezometric monitoring. On that basis, recommendation be made to ensure that contaminated (monitored on the

basis of Colour with other parameters) water does not affect other wells of public use. The Chairman State PCB may, based on the final report of the Committee and the study report to be submitted by IIT Mumbai, ensure further remedial action. Compliance will be treated as a consent condition for functioning of the factory except that if it is aggrieved by final report or study report, it will be open to it to file objections before this Tribunal. CPCB may also issue guidelines on operation of Digesters with reference to safety.

9. The interim report and the final report may also be placed on the website of the CPCB for six months so that the same can be accessed by the concerned stakeholders. We place our appreciation on record for the work executed by the expert Committee which may be conveyed to the members by the CPCB.

The application is disposed of.

A copy of this order be forwarded to CPCB, State PCB, IIT, Mumbai, District Magistrate, Solapur, MoEF&CC, NEERI and the District Legal Authority, Solapur by email.

Adarsh Kumar Goel, CP

Sudhir Agarwal, JM

Brijesh Sethi, JM

Dr. Nagin Nanda, EM

August 16, 2021
Original Application No. 274/2020
SN

75259/2022/TECH-RD (Pune)

Annexure-IV

CIN - U74110PN2012PLC141952

LOKNETE SUGAR

LOKNETE BABURAO PATIL AGRO INDUSTRIES LIMITED

◆ Founder : Rajan Baburao Patil (Ex. MLA) ◆ Chairman : Vikrant (Balraje) Rajan Patil

Loknete/Distl./1039 /2020-2021

Date : 23/11/2020

To,

20112400TS-0061

The Regional Officer,
Maharashtra Pollution Control Board,
Pune

Subject : Information about accidental collapse of Bio-digester Tank, Reg.-Voluntarily closing the production of Distillery Unit.

Reference: Our consent No.00000092544/CR-2008000662 dated.19/08/2020

Respected Sir,

With reference to above cited subject & reference we would like to inform that we are operating 30 KLPD molasses based Distillery unit for which consent renewal is obtained on 19/08/2020 by above cited reference and it is valid up to 31/08/2021.

The distillery operation was just started on 07 Nov.2021for current season & Saturday night on 21/11/2020 at 11.45 PM suddenly accidental collapse of Bio-Digester Tank has occurred.

We have put our hard efforts to control the flow of digested spent wash rushed out from tank & have not reached to any of water body, avoiding water pollution. Now the entire situation is under control.

We would like to further communicate that we have voluntarily closed the production of distillery unit from this incident.

This is for your kind information.

Thanking you

Yours Faithfully

(O.S.Jogade)
Chief Executive Officer

Copy to : 1) The Joint Director
WPC, MPCB, Mumbai
2) SRO
MPCB, Solapur

Laxminagar, Angar, Tal. Mohol, Dist. Solapur, Maharashtra, Pin-413214.
Tel. : 9022667777 ·E-mail: loknetesugar@gmail.com

Annexure-V

SITE INSPECTION REPORT OF ACTUAL INCIDENT

Sub : Leakage of Bio-gas Digestor Tank on 21-11-2020 midnight from Distillery Unit of M/s Loknete Baburao Patil Agro Industries Ltd.,Laxminagar, Angar, Tal-Mohol, Dist-Solapur
– Accidental Incident

With reference to above referred subject, I have visited Distillery Unit of M/s Loknete Baburao Patil Agro Industries Ltd.,Laxminagar, Angar, Tal-Mohol,Dist-Solapur on 22-11-2020 alongwith company representative Shri Raosaheb Murlidhar Awanade, Distillery Manager. During the visit, in-depth survey of total Bio-digestor Distillery Unit Section and area around the factory was carried. The following observations are made :-

1) The Distillery Unit to the tune of 30.0 KLPD is located at M/s Loknete Baburao Patil Agro Industries Ltd.,601/592, Distillery Division, Laminagar, Angar, Tal-Mohol,Dist-Solapur. MPCB has granted Consent vide its No. 0000092544/CR-2008000662 Dated 19-08-2020 for Rectified Spirit – 900.0 KL/M Or Extra Neutral Alcohol – 600.0 KL/M Or Ethanol – 900.0 KL/Month. The consent granted upto 31-08-2021;

2) This distillery produces industrial effluent i.e. Spent Wash to the tune of 295.0 M3/day. Hence, the factory has installed the effluent treatment system such as 5 days' storage tank, the bio-digestor with the capacity of 96.0 Lakh liters M.S. steel tank. The overflow of this tank is connected to the 30 days' storage tank. Afterwards, bio-methenated spent wash send to 7.5 acre concrete compost yard as per CREP norms is constructed;

3) The distillery unit was not in operation in the season 2019-2020. The operations of the distillery unit were started on 02-11-2020 for the season 2020-2021. The digestor feeding is started from 7-11-2020 after spent wash achieves 5 days' level;

4) On 22-11-2020, Shri Raosaheb Murlidhar Awanade, Distillery Manager has informed from his mobile the accidental incidence of Bio-digestor of Distillery Unit;

5) While carrying inspection on the actual incident spot on 22-11-2020, it is observed that the plate of the bottom of the bio-digestor tank and upper side of welding is totally broken. The total tank is broken and lying on the one side is

observed. It is also observed that the spent wash of nearly 65.0 lakh litres from the Digestor Tank is spread in premises of the factory, bagasse yard, cane yard and in the compost yard, garden etc. It is also observed that Methene Gas Holding Tank is lying nearly 20 feet away from its installed spot. While inspecting, enquiry is made with representative of Distillery Unit regarding the incident, he informed the detailed information as under :-

On 21-11-2020 midnight, the crack is developed at bottom of welding of 11.45 meter bio-digestor tank and due to pressure, all of a sudden, the spent wash came out and due to heavy pressure of inside spent wash, the total tank is broken and collapsed at one side and spent wash and Methene gas from the tank is released in the premises of the factory. Due to which two workers near the accident spot Shri Jyotiba Vagare and Shri Suresh Chavan died due to suffocation and seven workers who were near the accidental spot suffered Respiratory /breathing distress and hence they were immediately sent to Shri Siddheshwar Hospital, Solapur for further medical treatment. It is informed that at present all the seven workers are in good conditions.

6) The inspection is carried of bio-digestor area where spent wash is spread. It is observed that spent wash is spread in the factory premises. It is also observed that the spent wash is spread at premises of the karkhana, bagasse yard, cane yard, compost yard and in the garden areas. It is seen that to some extent, the spent wash was flowing in the nalla at east side of the factory spray pond. The effluent sample of the spot is collected. In presence, the nalla flow is arrested by the help of two JCB machines. The Sina River is approximately 7-8 k.m. away from the factory site.

Today it is observed that the effluent is not get mixed in the river. While carrying inspection, it is also observed that there is no any source of storage fresh water near the area of the distillery unit.

7) During the visit, the instructions have been given to Distillery Representative that due to this incidence, the spent wash which is spread should be removed immediately by adopting all the system and collected spent wash should be stored in 30 days' lagoon and should be sent to compost yard for further treatment immediately;

8) Also, during the inspection, it is informed by the Distillery Representative that since 21-11-2020 midnight from 11.45, the operations of the distillery unit is stopped voluntarily.

9) The photographs at various spots were taken during the whole visit.

Sd/-
(R.M.Awatade)
Distillery Manager
Lo.Va.Pa.O.E.Ltd.,
Laxminagar Angar

Sd/-
(Prashant Bhosale)
Sub Regional Officer,
M.P.C.Board,
Solapur

75259/2022/TECH-RD (Pune)

प्रत्यक्ष घटणास्थळीचा पाहणी अहवाल

विषयः-लोकनेते बाबुराव पाटील ॲग्रो इंडस्ट्रीज लि.लक्ष्मीनगर अनगर, ता.मोहोळ,जि.सोलापूर या कारखान्याच्या आसवणी प्रकल्प (Distillery Unit) येथील मध्यरात्री बायोगॅसची डायजेस्टर टाकी गळती होवून दि.२१.११.२०२० रोजी झालेल्या दुर्घटना बाबत.

उपरोक्त विषयच्या अनुशंगाणे मे. लोकनेते बाबुराव पाटील ॲग्रो इंडस्ट्रीज लि, लक्ष्मीनगर , अनगर,ता.मोहोळ जि,सोलापूर या ठीकाणी दि.२२.११.२०२० रोजी प्रत्यक्ष घटणास्थळी कारखान्याचे प्रतिनिधी श्री.रावसाहेब मुरलीधर आवताडे डिस्टीलरी मॅनेजर यांच्या समवेत भेट दिली.भेटी दरम्यान संपुर्ण बायोडायजेस्टर आसवणी विभाग व परीसराची सखोल पाहणी केली. पाहणी दरम्यान खालील बाबी निदर्शनास आल्या.

- मे.लोकनेते बाबुराव पाटील ॲग्रो इंडस्ट्रीज लि, ६०१/५९२ आसवणी विभाग लक्ष्मीनगर,अनगर ,ता.मोहोळ जि,सोलापूर या ठीकाणी ३० केएलपीडीची डिस्टीलरी कार्यान्वीत अहे.सदर कारखान्यास म.प्र,नि.मंडळाणे समती पत्र क्रमांक. 0000092544/CR-2008000662 दिनांक१९.०८.२०२० अन्वये रेक्टीफाईड स्पीरीट ९०० किलो लिटर्स प्रती महीना,किंवा एक्स्ट्रा न्युट्रल अल्कोहोल ६०० किलो लिटर्स प्रती महीना किंवा इथेनॉल ९०० किलो लिटर्स प्रती महीना देण्यात आलेले आहे.त्यांची मुदत दि.३१.०८.२०२१ पर्यंत आहे.

- सदर डिस्टीलरी मधुन औदयोगीक सांडपाणी म्हणजे स्पेंन्टवॉश २९५ घन मिटर प्रति दिन येवढे निर्माण होते.याकरीता कारखान्याने सांडपाणी प्रक्रीया यंत्रणा म्हणुन ५ दिवसाची साठवण टाकी,त्यानंतर ९६ लाख लिटर्स क्षमतेचा बायोडायजेस्टर एम एस स्टिल टाकी बसविण्यात आलेली आहे.सदर टाकीचा ओहरफ्लो ३० दिवसाच्या साठवण टाकी मध्ये सोडण्यात आलेला आहे.त्यानंतर बायोमेथीनेटड स्पेन्टवॉश हा ७.५ एकर सीआरइपी मानांकप्रमाणे कॉंक्रीट कंपोस्ट यार्ड तयार करण्यात आलेले आहे.
- सदर डिस्टीलरी ही सन २०१९-२०२० रोजीच्या हंगामामध्ये बंद होती.सन २०२०-२०२१ च्या हंगामाला डिस्टीलरी दिनांक ०२.११.२०२० रोजी पासुन सुरु करण्यात आलेली आहे.व स्पेन्टवॉश ५ दिवसाच्या टॉकची लेवल आल्यानंतर.दि.०७.११.२०२० रोजी पासुन डायजेस्टरला फिड चालू करण्यात आले.

- दिनांक २२.११.२०२० रोजी डिस्टीलरीचे मॅनेजर श्री.रावसाहेब मुरलीधर आवताडे यांनी त्यांच्या भ्रमणध्वणीवरुन त्यांच्या डिस्टीलरी विभागाकडील बायोडायजेस्टरला आपघात झाले बाबतचे कळविण्यात आले.

- प्रत्यक्ष दि.२२.११.२०२० रोजी घटनास्थळी पहाणी केली असता,असे निदर्शनास आले की बायोडायजेस्टर टाकीच्या तळभागातील प्लेट व टाकीचा वरील भाग व्लेडींग मधुन पुर्णपणे तुटलेचा दिसुन येतो.संपुर्ण टाकी ही तुटुन एका बाजुस पडल्याचे दिसुन आले.तसेच डायजेस्टर टाकीमध्ये आसलेला अंदाजे ६५ लाख लिटर्स स्पेन्टवॉश हा कारखान्याच्या आवारात,बगॅस यार्ड,केनयार्ड ,कंमोटस्टयार्ड,बाग इत्यादी भागात पसरलेचे दिसुन आले.तसेच मिथेन गॅस होल्डींग टाकी ही त्याच्य जागेवरुन अंदाजे २० फुट येवढी लांब पडल्याचे दिसुन आले.पहाणी दरम्यान डिस्टीलरीचे प्रतिनीधी यांना सदरच्या घटणे बाबतची माहीती विचारली असता त्यांनी पुढील प्रमाणे झालेली सवीस्तर माहीती सांगीतली.

  दिनांक .२१.११.२०२० रोजीच्या मध्यरात्री ११.४५ मी.बायोडाजेस्टर टाकीच्या खालील तळभागाच्या वेल्डींगला चिर पडून त्यामधुन आचानक प्रेशरने स्पेन्टवॉश बाहेर आले व टाकीच्या आतमधील स्पेन्टवॉशच्या आती प्रेशर वाढल्याने संपुर्ण टाकी तुटुन एका बाजुस पुर्णपणे कोलमडली व त्या टाकीमधील स्पेन्टवॉश व मिथेन वायु कंमनीच्या परीसरामध्ये फेकला गेला.व त्या मध्ये जवळपास असणारी दोन कर्मचारी श्री.जोतीबा वगरे व श्र.सुरेश चव्हाण यांच्या गुदमरुन मृत्यु झला तसेच घटणा वेळी परीसरात आसलेली एकुण ७ कर्मचारी यांना श्वसनाचा त्रास होवु लागल्यामुळे सदरच्या ७ लोकांना तात्काळ सोलापूर येथील श्री.सिध्देश्वर हॉस्पील या दवाखान्यात उपचाराकरीता त्यांना रवाना करण्यात आले. व सध्या स्थितीत त्यांची प्रकृती चांगली आसल्याचे सांगीतले.

- बायोडायजेस्टर परीसरामधील स्पेन्टवॉश पसरल्याबाबतची पहाणी केली त्यामध्ये स्पेन्टवॉश हा कारखान्याच्या आवारामध्ये पसरल्याचे दिसुन आले. बगॅस यार्ड,केनयार्ड,कंमोटस्टयार्ड,बाग इत्यादी भागात पसरल्याचे दिसुन आले कारखान्याच्या पुर्वभागाकडील स्प्रेपाउंड लगत काही प्रमाणत स्पेन्टवॉश शेजारील नाल्यात वहात आसल्याचे दिसुन आले.सदर ठिकाणचा सांडपाणी नमुना घेण्यात आला.सदरील नाला आडवीण्याकरीता तात्काळ २ जेसेबी च्या साहयाने समक्ष आडविण्यात आला.सदरील कारखान्यापासुन अंदाजे ७ ते ८ किमी अंतरावर सीना नदी आहे.

75259/2022/TECH-RD (Pune)

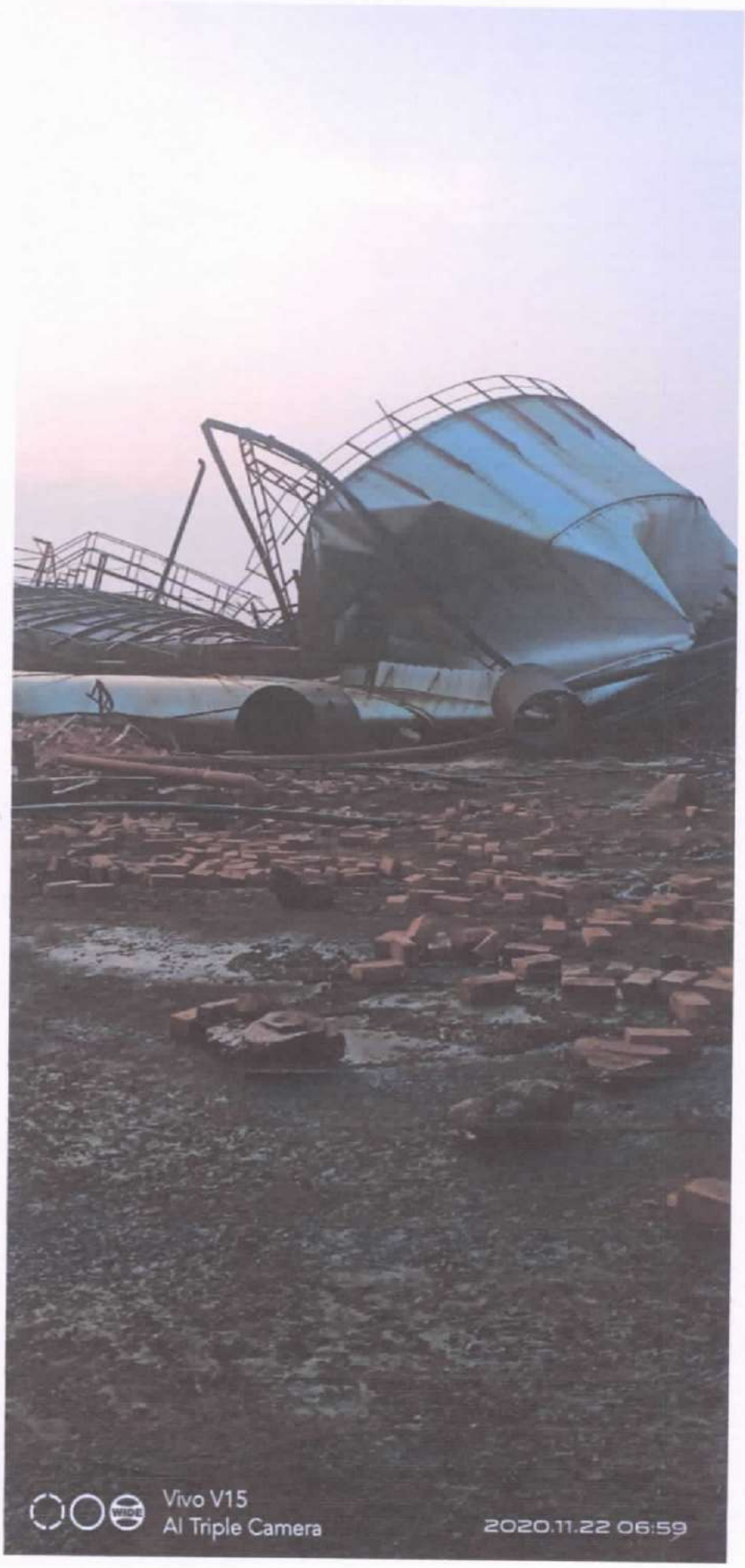
आज रोजी सदरील सांडपाणी हे नाल्या व्दारे नदी मध्ये गेल्याचे दिसुन येत नाही.तसेच कारखान्याच्या जवळपास परीसरामध्ये कोणताही इतर पाण्याचा साठवणुक स्त्रोत्र दसुन येत नाही.

- भेटी दरम्यान डिस्टीलरी प्रतिनीधींना अशा सुचना देण्यात आल्या की सदरील घटणेमुळे परीसरात पसरलेले स्पेन्टवॉश हे वेगवेगळी यंत्रणा वापरुन स्वच्छ करण्यात यावी व एकत्रीत केलेले स्पेन्टवॉश हे ३० दिवसाच्या लगुन मध्ये घेवुन कंम्पोस्ट यार्डवर वर पुढील प्रक्रीयेसाठी तात्काळ घेण्यात यावे.
- तसेच भेटी दरम्यान डिस्टीलरी प्रतिनीधी यांनी दि.२१.११.२०२० रोजी मध्यरात्री ११.४५ पासुन स्वइच्छेने डिस्टीलरी बंद केलेचे सांगीतले.
- वरील संपुर्ण भेटी दरम्यान वेगवेगळया ठिकाणीचे फोटो काढण्यात आले.

आर.एम.आवताडे
डिस्टीलरी मॅनेजर
लो.बा.पा.ऑ.इं.लि.
लक्ष्मीनगर अनगर

प्रशांत भोसले
उप प्रादेशिकअधिकारी
म.प्र.नि.मंडळ सोलापुर.

75259/2022/TECH-RD (Pune)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75259/2022/TECH-RD (Pune)

MAHARASHTRA POLLUTION CONTROL BOARD
REGIONAL OFFICE - PUNE

Phone No. 020-25811694
Fax No. 020-25811701
e-mail : ropune@mpcb.gov.in
visit us : www.mpcb.gov.in

महाराष्ट्र

Jog Centre, 3rd Floor,
Wakdewadi,
Old-Pune Mumbai Road,
Pune- 411003

MPCB/ROP/ MPCB/RO/ 2397. Date: 01 | 12 | 2020

To,

M/s. Loknete Baburao Patil Agro Industries Ltd.
Gat No. 601, 592,Laxminagar, Angar,
Tal. -Mohol, Dist - Solapur

Sub: Directions under section 32 and 33A of the Water (Prevention & Control of Pollution) Act, 1974 and under Section 31A of Air (Prevention & Control of Pollution) Act, 1981.

Ref : 1. Consent to operate granted by the Board valid upto 31/08/2021.
2. Accident incidence occurred in the factory Mid night of 21/11/2020.
3. Visit of Board's officials on 22/11/2020
3. Proposal submitted by SRO Solapur vide no. MPCB-LEGAL_ACTIONS-251120033 on 25/11/2020.

WHEREAS, the Maharashtra Pollution Control Board had granted Consent to Operate under Section 26 of the Water (Prevention & Control of Pollution) Act, 1974, under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and Authorization under Rule 6 of the Hazardous & Other Wastes (MH & TM) Rules, 2016 to your industrial activities.

AND WHEREAS, it is obligatory on your part to provide pollution control systems and to operate and maintain the same continuously and effectively so as to achieve the standards prescribed in the consent.

AND WHEREAS, as per section 32 of Water (P & CP) Act, 1974, it any incident / accident occurs in industry, its obligatory on your part:-

a) To remove that matter from the stream or well or on land and disposing it of in such scientific manner, as the Board considers appropriate.
b) To remediate or mitigate any pollution caused by its presence in the stream or well.

AND WHEEREAS, an accident was occurred in your factory at mid night of 21/11/2020 in distillery division at biogas digester tank.

AND WHEREAS, the officials of the Board have visited to your industry on 22/11/2020 and reported that,

1. The 30 KLD molasses based distillery is operating at above mentioned address, an accident occurred midnight of 21/11/2020 and due to accident it is observed that the bottom and top of the Digester were found completely broken and two casualties and seven persons are injured and due to this incidents, an estimated 6.5 million

litters of spent wash from Digester tank was found spread in the factory premises at Bagasse Yard, Cane Yard, Compost Yard, Garden area etc. and some quantity of spent was seen also observed flowing towards nearby Nalla but it has restricted with kaccha bandhra.

2. The spreading of spent wash in the area has caused soil and land pollution, it requires scientific collection and remediation.

3. You have not submitted any action plan for remediation and restoration of the soil and affected part.

AND WHEREAS, it has been observed from the office record and observations made during the visit, you are not complying with the consent conditions and the provision of the Water (Prevention & Control of Pollution) Act, 1974 and the Air(Prevention & Control of Pollution) Act, 1981 and thereby causing grave & sudden injury to the environment.

NOW THEREFORE, in exercise of the powers conferred upon me under section 33A of Water (Prevention & Control of Pollution) Act, 1974 and under Section 31A of Air (Prevention & Control of Pollution) Act, 1981, you are hereby directed that as your industrial activities are closed, you shall not resume your manufacturing activities till you complete restoration and remediation of affected land/soil etc. and obtain prior permission of the Maharashtra Pollution Control Board and Directorate of Industrial Safety and Health (DISH).

In case, you fail to comply with the above directions, the Board will have no option than to initiate appropriate legal action against you, which please note.

For and on behalf of
Maharashtra Pollution Control Board

(Dr. J. B. Sangewar)
Regional Officer, Pune

Copy submitted for favour of information to: Hon'ble Member Secretary, MPCB, Mumbai.

Copy Submitted for information to
1. Joint Director (WPC), M.P.C. Board, Mumbai.
2. Law & Policy Div. M.P.C. Board Mumbai.

Copy to-
The Sub-Regional Officer, M.P.C.Board, Solapur :- You are directed to keep the follow up and report the compliance from time to time.

75259/2022/TECH-RD (Pune)

जिल्हाधिकारी तथा अध्यक्ष जिल्हा आपत्ती व्यवस्थापन प्राधिकरण सोलापूर

जिल्हाधिकारी कार्यालय आवार, सिध्देश्वर पेठ, सोलापूर - ४१३००१
महसूल शाखा - जिल्हा नियंत्रण कक्ष
GOVERNMENT OF MAHARASHTRA
दूरध्वनी क्र. : (0217) - 2731020
फॅक्स क्र. : (0217) - 2621120
Email ID : collectorsolapur@gmail.com
Email ID : rdcsolapur@gmail.com
Email ID : ddmo.rfsol-mh@gov.in

जा.क्र. २०२०/मशा/कार्या-४/नैआ/जिनिक/प्र.क्र.९८/आरआर- 1964 दिनांक:- 31 /१२/२०२०

पत्र

प्रति,

व्यवस्थापक
लोकनेते बाबूराव पाटील ॲग्रो इंडस्ट्रिज लि.
लक्ष्मीनगर अनगर ता.मोहोळ जि.सोलापूर

विषय- लोकनेते बाबूराव पाटील ॲग्रो इंडस्ट्रिज लि.लक्ष्मीनगर अनगर या कारखान्याची बायोगॅसची टाकी फुटल्याने झालेल्या अपघाताबाबत.

संदर्भ- १. तहसिलदार मोहोळ यांचेकडील पत्र क्रमांक जबाबी/का.वि/२९४६/२०२० दिनांक १०/१२/२०२०
२. the Indian Express या वृत्तपत्रामध्ये सोमवार, दिनांक २३/११/२०२० रोजी प्रसिध्द झालेली बातमी.
३. मा.राष्ट्रीय हरित लवाद मुख्य शाखा नवी दिल्ली यांनी दिनांक १८/१२/२०२० रोजी व्हिडिओ कॉन्फरन्सव्दारे झालेली सुनावणी.
४. मा.राष्ट्रीय हरित लवाद मुख्य शाखा नवी दिल्ली यांचेकडील दिनांक १८/१२/२०२० रोजीचा आदेश

FM

उपरोक्त विषयास अनुसरून कळविणेत येते की, मा.राष्ट्रीय हरित लवाद मुख्य शाखा नवी दिल्ली यांचेकडील दिनांक १८/१२/२०२० रोजीचा आदेश या कार्यालयास प्राप्त झाला आहे. सदर आदेशातील मुददा क्रमांक १५ मध्ये त्यांनी असे नमूद केले आहे की, Vide order dated 08.06.2020 in O.A. No. 22/2020 (WZ), Aryavart Foundation through its President v. Yashyashvi Rasayan Pvt. Ltd. and Anr., we determined the interim compensation at Rs. 15 lakhs in the case of death, Rs. 5 lakhs in the case of serious injury and Rs. 2.5 lakhs to any other injured as follows:

"6..we assess interim compensation for death to be 15 lakhs each (taking into account multiplier of around 16 and loss of earning of about one lac a year, taking the minimum wage, apart from conventional sums), for grievous injury Rs. 5 lakh per person, for other injuries of persons hospitalized Rs. 2.5 lakh per person and for displacement at Rs. 25000/- per person."

तसेच मुददा क्रमांक-१६ मध्ये Accordingly, the said scale needs to be applied to the present case. Final compensation may be suggested by the Committee, including for restoration of environment. The industrial unit may deposit appropriate amount to cover interim compensation (deficit amount remaining to be paid) with the District Magistrate within one month, failing which, the District Magistrate may recover the same by coercive measures, as per law. The District Magistrate may ensure disbursement of the amount of interim compensation to the victims, excluding the payment already made. We request the District

Legal Authority, Solapur to provide assistance to the victims in accessing legal remedies. This order will be without prejudice to liability under the Criminal Law. असे नमूद केले आहे.

मा.राष्ट्रीय हरित लवाद मुख्य शाखा नवी दिल्ली यांचेकडील दिनांक १८/१२/२०२० रोजीचे आदेशातील मुददा क्रमांक १५ व १६ मध्ये नमूद केलेप्रमाणे मयत व्यक्तीच्या वारसदारांना व जखमी व्यक्तींना नुकसान भरपाई देणेकामी मयत व्यक्तीच्या वारसदारांची व जखमी व्यक्तीची यादी व त्यांचे धनादेश जिल्हाधिकारी कार्यालय सोलापूर यांचेकडे दिनांक १८/१२/२०२० पासून १ महिन्याच्या आत म्हणजेच दि.१७/१/२०२१ पर्यंत जमा करणेत यावी. सदरची रक्कम मुदतीत जमा न केल्यास आपणाविरूध्द मा.राष्ट्रीय हरित लवाद मुख्य शाखा नवी दिल्ली यांचे आदेशानुसार योग्य ती कटोर कारवाई प्रस्तावित करणेत येईल याची नोद घ्यावी.

सोबत- मा.राष्ट्रीय हरित लवाद मुख्य शाखा नवी दिल्ली यांचेकडील दिनांक १८/१२/२०२० रोजीच्या आदेशाची प्रत जोडली आहे.

(मिलिंद शंभरकर भा.प्र.से.)
जिल्हाधिकारी सोलापूर

प्रत- मा.राष्ट्रीय हरित लवाद मुख्य शाखा नवी दिल्ली यांना माहितीस्तव सविनय सादर.
प्रत-मा.विभागीय आयुक्त पुणे विभाग पुणे यांना माहितीस्तव सविनय सादर.
प्रत-तहसिलदार मोहोळ यांना माहितीसाठी व पुढील कार्यवाहीसाठी रवाना.
२/- सोबतचे पत्र संबंधितास आजच बजावणी करून त्याबाबतची पोहोच तात्काळ या कार्यालयास सादर करावी.

75259/2022/TECH-RD (Pune)

Govt. of Maharashtra
Directorate of Industrial Safety and Health

माहितीचा अधिकार

By R.P.A.D / By Hand

No.DDISH/Accd/PVS/ 541 /2020
Office of the Deputy Director,
Industrial Safety and Health,
105, Sakhar Peth, Solapur.
Date :- 09 DEC 2020

Loknete Baburao Patil Agro Industries Ltd.,
Laxminagar, Angar, Tq.- Mohol, Dist.- Solapur.

1. This remark shall be read in continuation with the previous visit remarks passed in this factory during my visit on dated 22/11/2020.

2. My office received telephonic information on dated 22/11/2020 at 9.30 am about fatal accident which was occurred on dated 21/11/2020 at 11.45 pm.

3. During visit, I took photographs of spot, obtained details of Bio-digester. Also obtained photocopies of register of Accident and dangerous Occurrences. Also recorded the statement of Shri. Mauli Pawar (Distillery Chemist) on dtd. 22/11/2020 in a factory.

4. The above said factory is registered under Factories Act, 1948 in which manufacturing process of making of sugar, ethanol from sugarcane is carried out. The licence No. 10014458 is renewed up to year 2020 for 500 workers and above 2000 HP.

5. Again visited the factory on dtd. 24/11/2020 along with Shri. H.R.Dhend, Jt. Director, Industrial Safety and Health, Pune-2. Factory found working. Observed the accident spot, took photographs. Shri. D.S. Jogade (C.E.O.) was present. I have recorded statement of witness Shri. Ravindra Gajendra Kakde (Biogas Plant Operator) & Shri. Kallapa Kisan Gurav (Watchman) in Siddheshwar Hospital, Solapur on dtd 23/11/2020.

6. I had visited factory on dtd. 23/08/2019. Factory found not working due to off season. I instructed orally to HR manager that safety measures to be adopted before re-starting the manufacturing process.

7. **About the Biogas manufacturing process:** - From the statement & actual observation, my enquiry revealed that, the above factory is engaged in manufacturing of white sugar, power generation of 17 MW using fuel as bagasse of sugarcane, Biogas (Methane). The factory is also engaged in manufacturing of ethanol & alcohol from sugar molasses by distillation process. In distillery division of the factory, there is one distillery for manufacturing of ethanol (30 KLPD). The sugar molasses produced in the sugar plant of the factory is used as raw material in the distillery where Ethanol & Alcohol are manufactured. In this distillation process, the unwanted residual liquid waste i.e Distillery Spent Wash is generated. This Distillery Spent Wash is sent to the Biogas Digester Tank as a raw material.

In this Factory, Biogas plant is situated outside the distillery section & The East side of the factory. Biogas (Methane) is generated from biogas plant. Biogas plant includes Biogas Digester, Lamella Clarifier. Biogas Holder, Gas flare unit, Laboratory, feed pump & sludge recycle pump. Spent wash i.e effluent from distillery unit is received in to R.C.C.receiving tank (sludge settling tank, five day holding capacity). Suspended solids settled in this tank are removed after stoppage of distillery. Clear effluent after getting mixed with recycled biomass from lamella clarifier to maintain a feed temperature of 36 to 38 ^{0} C is pumped to the Digester. At about 14 m^3 Distillery Spent Wash is feed on per hr basis to the Biogas Digester Tank. The feed rate is controlled by manual control valve & a flow meter provided in the feed line and the sludge recycling line. Then approximately 30 kg/day lime and adequate water is added in the Distillery Spent Wash stored in the Digester Tank. Also cow dung as a culture is added in the mixture for generation of Biogas. In the digester, the effluent gets further mixed with content of the digester with the help of central & lateral agitators which provide homogeneous mixing in the digester. The digester has about 24-25 days retention capacity. Anaerobic digestion takes place in the digester, as a result of which BOD/COD is reduced and biogas is evolved. The digested effluent/ biomass mixture overflow into degassing pond where entrapped gases are released. Degassed effluent flows to Lamella Clarifier for separation of active biomass from outgoing treated effluent. The clarified effluent leaves the lamella clarifier for disposal or to secondary effluent treatment plant, while the separated biomass is pumped back continuously in

to the Digester. The excess biomass is removed from the bottom of digester regularly to sludge beds for disposal or to form manure. Due to anaerobic digestion, biogas which is the mixture of 65 % of Methane gas & 35 % of CO_2 gas produced in the digester accumulates in digester roof. The generated Biogas is transferred from the top of the Biogas Digester Tank to Biogas Holder Tank (Diameter- 8 m, Ht.- 6m, capacity- 300m^3) which is installed at a distance of 20 ft. from the Biogas Digester Tank. The gas holder acts as intermediate gas storage as well as a Pressure control vessel. The biogas is pumped to the boiler house by biogas blower. Excess gas, if any, is burnt in gas flare unit whenever gas is not being utilized in the boiler. There was about 65 lakh liter spent wash in the Biogas Digester.

The details of Biogas digester Tank :-

1) Tank Shape – Cylindrical.
2) Tank Capacity – 96,00,000 litre
3) Height – 18 mtr.
4) Diameter – 26 mtr.

One center Mounted Vertical Agitator is provided on the top of the Digester Tank, 3 lateral agitators are given at the bottom level of the tank. One manhole is provided on the side shell wall of the tank at bottom level and two manhole is provided on the top Dome of the tank.

8. **About Incidence -:** From the statement, my enquiry revealed that on the day of incident i.e. on dated 21/11/2020, manufacturing process of making sugar from sugarcane was being carried out. Distillery section also started from 02/11/2020. On 07/11/2020, spent wash feeding @ 2 m^3/hr was started to biodigester. Shri. Ravindra Kakde (Biogas Plant Operator) joined duty at 8.00 pm in night shift (8.00pm to 4.00pm) along with his colleague Shri. Suresh Chavan (Helper). Both were working in Biogas plant. Shri. Kakde was looking after Bio Gas Plant Operation.Shri. Kakde took the charge of night shift from second shift Biogas Plant Operator Shri. Ram Tormal. As usual, Spent wash produced in distillery was transferred to Bio Digester. At early stage, Methane generation was not started. Manhole on the roof of Digester Tank & vent kept open. Hence pressure was not developed inside the Digester. When methane gas generation starts, Then Vent and manhole of the digester kept closed. This methane gas is stored in Gas Holder. Shri. Kakde took the sample of spent wash in the digester for analysis. Then at around 11.45 pm, Shri. Kakde & Shri. Chavan were sitting outside the lab. Shri. Kakde heard sound from Digester which is 10 ft away from him. He

went towards the Digester Tank. He noticed Spent Wash was released from crack developed at the Bottom of Tank. He turns around in fear. Within a fraction, welded bottom plate of the Digester Tank got sheared off and upper portion of tank fell on the ground. This resulted in heavy flow of spent wash (appro.65 lac litres) in all over surrounding area i.e bagasse yard, cane yard, composter yard garden etc. Due to heavy flow of spent wash, the above two workers & Shri.Jyotiram Dada Vagare working in nearby area were thrown away. Shri. Kakde hold branch of tree while Shri. Chavan & Shri. Vagare were bombarded on factory structure / machinery resulting in serious head injuries & fractures. Also due to pungent smell of spread spent wash, 8 workers working in nearby area became unconscious. All 10 workers were immediately shifted to the Siddheshwar Hospital, Solapur through factory vehicle. Two workers declared dead in the Siddheshwar Hospital, Solapur during treatment on 21/11/2020. After giving necessary first aid treatment, other seven workers were discharged from the Siddheshwar Hospital, Solapur on dated 24/11/2020 & last one worker Shri. Kakde was discharged from Siddheshwar Hospital, Solapur on dtd. 26/11/2020. As per Post Mortem reports, Shri. Kakde & Shri. Vagare died due to Head injuries.

In this incident, Biogas Digester tank & it's accessories like feed pump, motor, sludge recycle pump, lamella clarifier shell, Gas holder, gas flare equipment, safety device, biogas blower etc. Also walls & panel of laboratory got damaged due to heavy flow of spent wash. Factory management reported that in this incident, Machinery/equipment, structure loss of Appro. Rs.3,10,000,00 took place. These machineries/equipments are covered under insurance policy.

The details of workers died/injured are as follows-:

Sr. No.	Name of worker	Age about	Nature of work	Dt. of discharged
1.	Shri. Jyotiram Dada Vagare	45 yrs.	Pumpman	Expired on 21/11/2020 at Siddheshwar hospital, Solapur.
2.	Shri. Suresh ankush Chavan	22 yrs.	Helper	Expired on 21/11/2020 at Siddheshwar hospital, Solapur.

3.	Shri.Sajjan Balu Jogdand	20yrs.	Pumpman	Discharged on 24/11/2020 from Siddheshwar Hospital, Solapur.
4.	Shri. Mangesh Namdeo Pachpund	24 yrs.	Helper	Discharged on 24/11/2020 from Siddheshwar Hospital, Solapur.
5.	Shri. Mahesh Dilip Bodke	20 yrs.	Helper	Discharged on 24/11/2020 from Siddheshwar Hospital, Solapur.
6.	Shri. Kalyan Kisan Gurav	29yrs.	Watchman	Discharged on 24/11/2020 from Siddheshwar Hospital, Solapur.
7.	Shri. Parmeshwar Madhukar Thite	25 yrs.	Helper	Discharged on 24/11/2020 from Siddheshwar Hospital, Solapur.
8.	Shri.Raju Dattatraya Gaikwad	20 yrs.	Helper	Discharged on 24/11/2020 from Siddheshwar Hospital, Solapur.
9.	Shri. Ravindra Gajendra Kakde	29 yrs.	Biogas Operator	Discharged on 26/11/2020 from Siddheshwar Hospital Solapur.
10.	Shri. Sanjay Bajirao Panche	54 yrs.	Contractor	Discharged on 24/11/2020 from Siddheshwar Hospital, Solapur.

9. **Contravention of Section 7- A(2)(a) of Factories Act,1948-:**

As per provision of Sec. 7-A(2)(a) of factories Act, 1948 Every occupier shall ensure so far as reasonably practicable, the health, safety and welfare of all workers while they are at work in the factory. It shall include the provision of maintenance of plant and system of work in the factory that are safe & without risk to health.

From enquiry and statement of workers, it is revealed that, welded bottom plate of the Bio digester got sheared off and spent wash spill on the ground. This Bio digester was installed in year 2009 & is being used for production of biogas till date. Bio digester is of S.S. material having welded bottom plate. Spent wash stored in Biodigester is corrosive & acidic in nature. On the day of accident, worker working nearby noticed some leakage of spent

wash from crack in welded joint of bottom plate of Bio digester. Within fraction of second, due to heavy pressure& weight of inside spent wash, the entire bottom plate abruptly got sheared off and bio digester fell on the floor resulting into spillage of spent wash in the premises. Due to heavy flow of spent wash, 3 workers working in that area were thrown away along spent wash. Therefore it appears that bottom plate of the Bio digester was not in sound condition. If welded bottom plate of the Bio digester was maintained in sound condition & was kept free from any corrosion, wear etc, spent wash would not have leaked from Bio digester and would have avoided the incident.

Thus Bio digester & it's welding were not properly maintained in safe working condition and was with risk to the safety of workers working there as such the provision of Section 7- A(2)(a) of Factories Act,1948 has been contravened by the occupier.

10. **Contravention of Rule 65(2)(b)(c) of Maharashtra Factories Rules,1963:**

As per provision of Rule 65(2)(b)(c) of Maharashtra Factories Rules,1963: Every pressure vessel used in any factory shall be (b) of sound construction& material and of adequate strength and shall be free from any defect; and (c) properly maintained in a safe working condition.

Bio digester which was operated at a pressure of 3 Kg/cm2 (gauge pressure) i. e. greater than atmospheric pressure. This is a pressure vessel within the meaning of Rule 65 (1)(d) of MFR 1963 being used in the manufacturing process of biogas..

From on spot enquiry and statement of workers, it is revealed that, welded bottom plate of the Bio digester got sheared off and spent wash spill on the ground. This Bio digester was installed in year 2009 & is being used for production of biogas till date. Bio digester is of S.S. material having welded bottom plate. On the day of accident, worker working nearby noticed some leakage of spent wash from welded joint of bottom plate of Bio digester. Within fraction of second, the entire bottom plate got sheared off and bio digester fell on the floor resulting into spillage of spent wash in the premises. Due to heavy flow of spent wash, 3 workers working in that area were thrown away along spent wash. Therefore it appears that bottom plate of the Bio digester was not in sound construction & its welding is ofnot having adequate strength. If welded bottom plate of the Bio digester was maintained in sound condition & was kept free from any corrosion, wear etc, spent wash would not have leaked from Bio digester and would have avoided the incident. Thus workers could have been saved.

Thus Bio digester & it's welding were not properly maintained in safe working condition and was with risk to the safety of workers working there as such the provision of Rule 65(2)(b)(c) of Maharashtra Factories Rules,1963 has been contravened by the occupier.

11. **Contravention of Rule 65(4)(a)(b)(c) of the M.F.R. 1963 -:**

Bio digester which was operated at a pressure of 3 Kg/cm2 (guage pressure) i. e. greater than atmospheric pressure. This is a pressure vessel within the meaning of Rule 65 (1) (d) of MFR 1963 being used in the manufacturing process of biogas.

The pressure plant in service shall be thoroughly examined by a competent person

a) Externally once in every period of six months
b) Internally ,once in every period of twelve months and
c) Hydraulic test once in a period of four years.

I asked factory manager to show the pressure vessel test report in Form 13 as per provision of Rule 65(4)(a)(b)(c) of the Maharashtra Factory Rule 1963. It is learned that last examination was carried out in October 2018. On the day of incident dtd. 21/11/2020 & also on the day of my visit to above said factory on dtd. 22/11/2020, I found that biodigester did not got thoroughly examined from competent person as stated above & hence the Occupier of the factory hence contravened the provisions of Rule 65(4)(a)(b)(c) of the Maharashtra Factory Rule 1963.

12. **Contravention of Rule 65(6) (ii) of Maharashtra Factories Rules, 1963:**

During enquiry it is learnt that last crushing season of factory ended on 21/02/ 2018 and new season started from 21/10/2020. Plant was idle for this period i. e. 3 months & no manufacturing process was carried out during this period. Bio digester which was operated at a pressure of 3 Kg/cm2 (guage pressure) continues a pressure vessel as define under rule 65 (1)(d) of MFR 1963 being used in the manufacturing process.

As per provision of 65 (6) (ii) , "No pressure plant or pressure vessel which has been previously used or has remain isolated or idle for period exceeding 6 months or which has undergone repairs or alternations shall be used in a factory unless it is examined and tested by a competent person. Hence it is mandatory on the part of occupier to carry out testing of this pressure vessel which was idle for a period exceeding 6 months.

It is observed at the time of my visit that said pressure vessel i.e. Bio digester was not examined and tested by a competent person before taken into the use for current crushing season on datd 21/10/2020.

Hence by not getting examined and tested the above said Bio digester by a competent person before taken into the use which was idle for period exceeding 6 months, the provision of rule 65 (6) (ii) of Maharashtra Factories Rules, 1963 has been contravened.

13. Remedial Measures: To avoid reoccurrence of such incidence in future following remedial measures are suggested:

i. Maintenance of all plant, machineries, fittings, piping, pressure vessels, gasket etc. shall be carried out to ensure that they were in sound condition and without risk to the safety of workers.
ii. Periodical maintenance of the storage tanks shall be carried out.
iii. Periodical testing & examination of tanks shall be carried out.
iv. Every pressure vessel shall be got tested hydraulically at the interval of Two years.

14. The occupier/Manager of the factory is instructed that,

i Compensation as per Employee's Compensation Act, 1923 shall be given to legal heirs of deceased worker & suitable employment shall be given to family member of deceased workers.
ii. To pay substantial amount as an ex-gratia payment to the legal heir of deceased workers.
iii. To provide employment to the nearest relative of the deceased workers.

15. Show Cause Notice: The Occupier shall explain and show causes, if any, within seven days that why legal action may not be considered against them for the above said contravention.

(P. V. Surse)
Deputy Director,
Industrial Safety and Health,
Solapur.

75259/2022/TECH-RD (Pune)

महाराष्ट्र शासन
औद्योगिक सुरक्षा व आरोग्य संचालनालय, सोलापूर
१०५, साखर पेठ , सोलापूर ४१३००५
दुरध्वनी क्रमांक ०२१७-२६२६५७७,२६२६२३० ई-मेल dydish.sol-mh@gov.in

RPAD / By Hand

जा.क्र.औसुवआसो/कादानो/542/२०२०

दिनांक : 10 DEC 2020

प्रति,

Shri. PRAKASH JANARADHAN CHAVARE
Occupier
Loknete Baburao Patil Agro Industries Ltd.,
Laxminagar, Angar, Tal.- Mohol, Dist.- Solapur.

विषय :- कारणे दाखवा नोटीस
Show cause Notice

महोदय,

आपले लक्ष माझे दिनांक दि. २२/११/२०२० रोजीच्या सविस्तर शेरे मधील / विशेषत : शेरे क्र.०९,१०,११ & १२ कडे वेधण्यात येत असून आपणास कळविण्यात येते आहे की त्यामध्ये कारखाने अधिनियम १९४८ च्या खालील तरतुदीचा भंग दाखविण्यात आलेला आहे.

- **Section 7 A (2)(a) of The Factories Act, 1948**
- **Rule 65(2)(b)(c) of The Maharashtra Factories Rules 1963**
- **Rule 65(4)(a)(b)(c) of The Maharashtra Factories Rules 1963**
- **Rule 65(6) (ii) of The Maharashtra Factories Rules, 1963**

तरी आपणांस कळविण्यात येत आहे की वरील उल्लंघनाबाबत आपणाविरुध्द कायदेशीर कारवाई का करु नये ? सदर नोटीस मिळल्यापासून सात दिवसाच्या आत तीन प्रतीत या कार्यालयास खुलासा कळवावे. जर विहीत कालावधीत काही खुलासा प्राप्त झाला नाही तर आपणास खुलासा सादर करावयाचा नाही असे समजून योग्य ती कायदेशीर कारवाई केली जाईल यांची नोंद घ्यावी.

(प्र.वि.सुरसे)
उपसंचालक
औदयोगिक सुरक्षा व आरोग्य, सोलापूर

Received by me
Anil Govind Pawar
9552557511
10.12.2020

75259/2022/TECH-RD (Pune)

Govt. of Maharashtra
Directorate of Industrial Safety and Health

माहितीचा अधिकार

By R.P.A.D / By Hand

No.DDISH/Accd/PVS/555/2020
Office of the Deputy Director,
Industrial Safety and Health,
105, Sakhar Peth, Solapur.
Date:
16 DEC 2020

TO,

OCCUPIER & MANAGER OF
M/s Loknete Baburao Patil Agro Industries Ltd.,
Laxminagar, Angar, Tq.- Mohol, Dist.- Solapur.

Whereas there was fatal accident took place on 21/11/2020 at 11.45 p.m. due to leakage of spent wash from joints of the welding of bottom plate of the Bio digester tank. Within fraction of second, due to heavy pressure and weight of the spent wash (approx. 65 Lakh Liters) inside the tank, the entire bottom plate abruptly got sheared off and bio digester fell on the ground, which resulted into spillage of spent wash in the premises. Due to heavy flow/ flash flood of spent wash, 3 workers working in that area were thrown away along spent wash. Out of these workers one worker survived as he caught branch of tree & saved him from drowning. Other two workers flown with spent wash and collided with factory structures and sustained severe head injuries resulted in to death.

In this incident, Biogas Digester tank & it's accessories like feed pump, motor, sludge recycle pump, lamella clarifier shell, Gas holder, gas flare equipment, safety device, biogas blower etc. and also wall & panel of laboratory got damaged due to heavy flow of spent wash.

I find imminent danger in the Operation of Bio Gas (Methane) Generation Plant; therefore under the power vested with me under *Section 40(1) of Factories Act 1948*, I hereby pass the following order.

75259/2022/TECH-RD (Pune)

ORDER

The Operation of Bio Gas (Methane) Generation Plant in the factory should not be carried out unless the following safety measures are taken & complied with.

1. *Maintenance of all plant, machineries, fittings, piping, pressure vessels, tanks & its accessories, gasket etc. shall be carried out to ensure that they are in sound condition and without risk to the health & safety of workers.; and*
2. *All the Pressure vessels, pressure plants, tanks, safety valves, piping system etc. shall be got thoroughly examined by a competent person as per of Rule 65(4)(a)(b)(c) of the M.F.R. 1963 and report shall be submitted to Office of Dy. Director (Industrial Safety & Health, Solapur).*
3. *Certificate of stability of every work of engineering construction shall be obtained from the competent person in Form no. 1-A as per Rule 3 of Maharashtra Factories Rules 1963.*

(P. V. Surse)
Deputy Director,
Industrial Safety and Health,
Solapur.

CC: 1. Hon. Director (Industrial Safety & Health, Mumbai).....For information please.
: 2. Hon. District Collector, Solapur.....For information please.
: 3. Hon. Joint Director (Industrial Safety & Health, Pune-2).....For information please.
: 4 Police Inspector, Mohol Police Station, Tal. Mohol, Dist.Solapur.....For information please.

75259/2022/TECH-RD (Pune)

महाराष्ट्र शासन

औद्योगिक सुरक्षा व आरोग्य संचालनालय, सोलापूर

१०५, साखर पेठ , सोलापूर ४१३००५

दुरध्वनी क्रमांक ०२१७-२६२६५७७,२६२६२३० ई-मेल dydish.sol-mh@gov.in

RPAD / By Hand

जा.क्र.औसुवआसो/कादानो / 545 /२०२०

दिनांक :- 11 DEC 2020

प्रति,

Shri. PRAKASH JANARADHAN CHAVARE
Occupier
Loknete Baburao Patil Agro Industries Ltd.,
Laxminagar, Angar, Tal.- Mohol, Dist.- Solapur.

विषय :- शुध्दीपत्रक

Corrigendum

संदर्भ:- या कार्यालयाचे सविस्तर शेरे दि.२२.११.२०२० रोजी नुसार

महोदय,

आपले लक्ष माझे दिनांक दि. २२/११/२०२०.रोजीच्या सविस्तर शेरे मधील / विशेषत : शेरे क्र.५ मध्ये Shri D.S. Jogade (C.E.O.) असे नमूद करण्यात आले होते त्याऐवजी खालील प्रमाणे वाचावे. Shri. O.S. Jogade (C.E.O.) ,

शेरे क्र.८ मध्ये Two workers declared dead in the siddheshwar hospital, solapur, As per post mortem reports, shri kakde & shri vagare died due to to head injuries &

The details of workers died/injured are as follows-:

Sr. No.	Name of worker	Age about	Nature of work	Dt. of discharged
1.	Shri. Jyotiram Dada Vagare	45 yrs.	Pumpman	Expired on 21/11/2020 at siddheshwar hospital, Solapur.
2.	Shri. Suresh ankush Chavan	22 yrs.	Helper	Expired on 21/11/2020 at siddheshwar hospital, Solapur..

75259/2022/TECH-RD (Pune)

असे नमूद करण्यात आले होते त्याऐवजी खालील प्रमाणे वाचावे. Two workers declared dead in ... Civil Hospital, Mohol, Dist. Solapur , as per post mortem reports, Shri Chavan & shri Vagare died due to to head injuries & The details of workers died/injured are as follows-:

Sr. No.	Name of worker	Age about	Nature of work	Dt. of discharged
1.	Shri. Jyotiram Dada Vagare	45 yrs.	Pumpman	Expired on 21/11/2020 at Civil Hospital, Mohol, Dist. Solapur
2.	Shri. Suresh ankush Chavan	22 yrs.	Helper	Expired on 21/11/2020 at Civil Hospital, Mohol, Dist. Solapur

शेरे क्र ९ व १० मध्ये - Bio digester is of S.S.material असे नमूद करण्यात आले होते त्याऐवजी खालील प्रमाणे वाचावे. - Bio digeste is of M.S.material,

शेरे क्र.१०,११,१२ मध्ये Bio digester which was operated at a pressure of 3 Kg/cm2 (gauge pressure) असे नमूद करण्यात आले होते त्याऐवजी खालील प्रमाणे वाचावे.

Bio digester which was operated at a pressure of **0.04 Kg/cm2 (gauge pressure)** .

कृपया नोंद घ्यावी.

(प्र.वि.सुरसे)
उपसंचालक
औदयोगिक सुरक्षा व आरोग्य, सोलापूर

O/C

CIN - U74110PN2012PLC141952

LOKNETE BABURAO PATIL
AGRO INDUSTRIES LIMITED

LOKNETE SUGAR

◆ Founder : Rajan Baburao Patil (Ex. MLA) ◆ Chairman : Vikrant (Balraje) Rajan Patil

Loknete/Dist./1110/2020-2021 05/12/2020

To,

The Regional Officer
Maharashtra Pollution Control Board,
Jog Centre, Wakadewadi,
Pune - 411003

Subject: Direction under section 32 and 33A of the wa (Prevention and control of Pollution)Act,1974 and und section 31A of Air (Prevention & Control of Pollution) Act,1981.

✓ **Submission of Action Plan and Action Taken Report.**

Reference: Your Letter No.MPCB/ROP/MPCB/00/2397 by your letter dated 01/12/2020 sent by email on 04/12/2020

SIR,

Received
08-12-2020
Jr. Clerk
Sub. Regional Office
M. P. C. Board,
Solapur

The unfortunate incidence happened on **Saturday, 21st November 2020 just before mid-night at 11.45 pm**. We intimated all the officials and Government Authorities, such as Police, Revenue Official Talathi, DISH and MPCB. As such, all could visit the site immediately on 22/11/2020.

Your Sub-Regional Officer visited immediately and had inspected the site.

The Distillery Unit operations were immediately closed by us voluntarily, on our own, without any directions from any authority. The same are still closed.

We have received the directions given by your letter dated 01/12/2020. We have given below the details of what happened at site, actions taken already

and the **actions we are taking in next 5 days**. We request MPCB Officials to visit the site and check the compliance of the same, including the collection of soil where effluent (spent-wash) had spread and remediation work done till then and in progress.

DIRECTIONS BY MPCB 01/12/2020

1. The 30 KLD molasses-based distillery is operating at above mentioned address, an accident occurred midnight of 21/11/2020 and due to accident, it is observed that the bottom and top of the Digester were found completely broken and two casualties and seven persons are injured and due to this incident an estimated 6.5 million liters of spent wash from Digester tank was found spread in the factory premises at Bagasse Yard, Cane yard, compost yard, Garden area etc. and some quantity of spent was seen also observed flowing towards nearby Nalla and it is restricted with ***kacchabandhra***.

2. **The spreading of spent wash in the area has caused soil and land pollution, it requires scientific collection and remediation.**

3. **You have not submitted any action plan for remediation and restoration of the soil and affected part.**

FACTS AT SITE

We are operating 30 KLPD (=30 m^3/day = 30,000 liters/day) molasses based distillery since 2009 by obtaining the Environment Clearance from the MoEF vide their letter No.J-11011/473/2006-IA-II(I). We obtained 'Consent to Operate' No. 0000092544/CR-2008000662 dated 19/08/2020 which is valid up to 31/08/2021, for current season.

We have a bio-digestor unit since the year 2009, of size ϕ26m x 18m tall. It is made-up of mild-steel plates. The thickness of these plates is Varying

from 20mm at the bottom to 8mm at the top. The plates are welded with each other. The tank is painted from outside with radiation reflective paint. The tank is on the ground only, on the leveled foundation.The inside of the tank is inspected, maintained and coated with epoxy paint, to counter the corrosion. the total capacity of the tank is about 96 lakh liters (=9600m^3). The last year/season of 2019-2020, it was not in operation.

For current season of the distillery operation was started from 02/11/2020. The effluent (spent-wash) generated from manufacturing process is about 295m^3/day. The gradualdigester feeding was startedfrom 07/11/2020. i.e.**only 14 days prior to the date of incidence.**

The anaerobic process has various phases, starting with acidification phase. Actual, initial Methane Gas generation phase starts after about 30-40 days. As such till then, even the tank-top Manholes are also not closed and are open. ***There is no Methane Gas (CH_4) generation from the first feeding, for the first 30 days.***

Unfortunately, on 21/11/2020 at midnight at 11:45 pm accident occurred by collapsing the bio-digester at letting out spent wash. It appears from the observation and inspection, that the welding at the bottom-shell of the tank cracked, due to hydrostatic pressure of the stored effluent (spent-wash). The tank ruptured at the bottom. There was no explosion. There was no explosion due to pressure. There was no fire. The rupture at the bottom-shell of the tank was due to cracking of the welding.

The storage till then was only 67% of the full-tank capacity. i.e.The effluent (spent-wash) generated and stored till then was 65 lakh litters. This was spread in the factory premises at **Bagasse Yard, Compost Yard Bulk BullockCart Yard, Distillery Campus,** etc.**This spread was approximately 6 Acre of land (24,000m^2)**. The area of spread within the factory is shown on the enclosed map.

There was no Gas Pressure inside, as much as top manhole covers were open. There was no Methane Gas generation till then. That stage and phase of would have come after about 30 days later.The Methane Gas has density of 0.678 kg/m3 it has Specific Gravity of 0.555 as compared to that of air, which is 1.0.As Such , it is much lighter than air and would escape through open manholes (even if it is generated).It is not harmful to human being, as long as Oxygen level in the air we breathe is maintained >19% (**This is also verified from the Material Safety Data Sheet**)

Please note that the **Police Panchnama** has been done and **Post Mortem** reports of 2 nos. of employees that died have come.

OPINION AS TO THE PROBABLE CAUSE OF DEATH:

Head injury with intracranial Haemorrhage with dislocation of both the hip joints

The death of the employees has been caused by physical injury and not due to suffocation by Gas or Methane Gas. The news item that appeared in the newspaper was based on the report send by their representative and Post Mortem Reports were not available at that point of time .Inspection of site has been by DISH and Talathi also. The reports also have come.

ACTION ALREADY TAKEN

COMPENSATION TO DECEASED WORKERS

We took the computation for the same as per the Workman Compensation Act and we have already paid in excess of the amount liable as per the Act. i.e. Rs.10 lakhs each.

We have also given the employment to the heirs of both the employees. Heir of one has already accepted the job, the other one would be confirming in next week.

We have borne the expenses of all the affected employees that were admitted to the hospital. After discharge from hospital, we have given them initial paid leave of 15 days each, to recover from trauma.

ENVIRONMENTAL POLLUTION CONTROL

Majority of this spilled out effluent (spent-wash)i.e.80% of this spent wash is collected in the factory premises itselfexcavating two temporary pits of total capacity of 45 lakh liters. These are towards the flow direction with sizes 45x30x2 m (27 lakh liters) and 30x30x2 m (18 lakh liters), to arrest the flow of effluent (spent-wash)outside the campus of factory. This collected spent wash in kachha pits is filled in tankers through pumps and borough to the 30 days storage tank, which too we already have.

Inspite of all our efforts, quantity @10% is reached to dry nallah Some of it escaped the premises through drains and ran in to dry-nallah adjacent to industry. That too was quickly stopped in that dry-nallah only, by constructing ***kachabandhara*** using 2 nos . of JCB.

About 10% of spent wash is spread in campus part, and has soaked the soil and also might have percolated through soil. The ground water table (underground water table) is more than 10m deep. As such there is no chance that it would reach the ground water. **Test pits on site, did not show percolation beyond 75mm to 150mm, as industry started the retrieval immediately without any delay**.

We have also stopped the flow this spent wash through dry nallah by constructing *kachhabandhara* with 2 nos. of JCBs thus avoiding pollution of surface and ground water, outside the premises.

The scrapping of the polluted soil is started with the help of 3 excavators and dozing tractors and this scraped soil transport to compost yard Which will be utilized in composting process along with press mud and fly ash as filler material for making compost.

Some Spent wash is mixed with baggas in baggas yard. This baggas will be dried and incinerated in Boiler using as fuel.

Thus, we have started the remediating and restoration of soil in the affected part.

ON-GOING ACTION (WITHIN WEEK)

We have estimated that about total 6 Acres area has been covered by the effluent (Spent-Wash) spread out.The Total Soil quantity that we have started scrapping and gathering in the compost yard will be about 6 x 4000 x 0.1 x 1.8 = 4320 Mt. We have area to store within the premises making a heap.

We already have the composting yard. It is lined with geomembrane. We are going to treat the soil with bio-culture, which is time-tested.We will be treating this soil in the wind-row at composting yard. As such, the entire soil would be treated in maximum 30 days.

Majority 90% of the area is within our own factory premises, as described and shown in the map. As such we can work round the clock without any difficulty. Some of the area was already under usage and hence was not the open mother earth. **This scrapping and transport of soil to compost area will be completed within up to 12/12/2020.**

We are always very conscious about protection of environment thus abiding **Water(Prevention and Control of Pollution) Act1974** under section 21 of the **Air (Prevention and Control of Pollution)Act1981** and Authorization

under rule 6 of the **Hazardous and other Wastes (MH&TM)Rules2016** to our industries activities

We are hereby submitting photographs of the activities that are performed and ongoing to complete the above task within the stipulated time so as to avoid the environment pollution.

ACTION PLAN AS PER MPCB DIRECTIONS 01/12/2020

CONTAMINATED SOIL COLLECTION & REMEDIATION

MPCB has directed us to collect the contaminated soil and treat it. It will have to be remediated by treatment in wind-row composting at existing compost yard with bacteria culture we use for treating the digested effluent (spent-wash).

We are sending the collected contaminated soil to MPCB for testing.

We are also sending it to nearby Agricultural College for testing, with a view to seek the guidance on the ratio of mixing with the natural soil, before disposing-of within our industry premises in the garden and tree plantation area. We have earmarked the area of about 13 Acres for this purpose. The contaminated soil, after treatment will be rechecked for its suitability as the farm-land/soil.

As such we will test and decide the ratio of mixing it with the normal soil, so that it would be conditioned to sustain the vegetation on it.

We have estimated the total expenses of Rs.45 lakhs for this soil collection, testing, treatment, mixing with the soil and then utilizing it within our premises in garden/tree plantation area.

All the areas shall be marked on the map. We shall document the action by photographs.

We have also ordered for the fabrication and bought out items of new bio-digestor for Rs.1.12 Crore. The estimated basic material (like steel plates) would be supplied by us for Rs.1.8 Crore. The work of the same shall start immediately.

Learning from the experience, the new bio-digester shall have the paving and bund-wall all around it with 1 m height.

The entire activity shall be open for inspection, scrutiny and guidance by the MPCB and DISH. The construction plans and action plan shall be submitted for the inspection and approval of the MPCB before 12th December 2020.

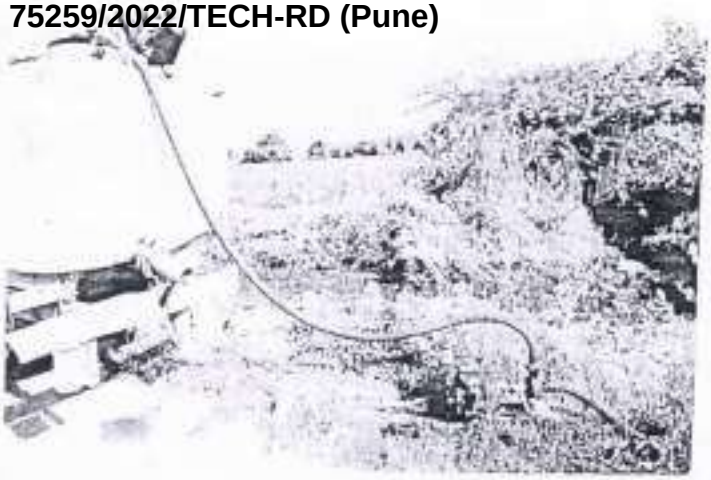
We request the visit of the MPCB officials to our factory on 12th December 2020 to see the complete action take as stated above.

This is for your information and kind consideration.

Thanking you.
Yours faithfully,

(O.S.Jogade)
CHIEF EXECUTIVE OFFICER

Copy to : SRO, MPCB,Solapur.



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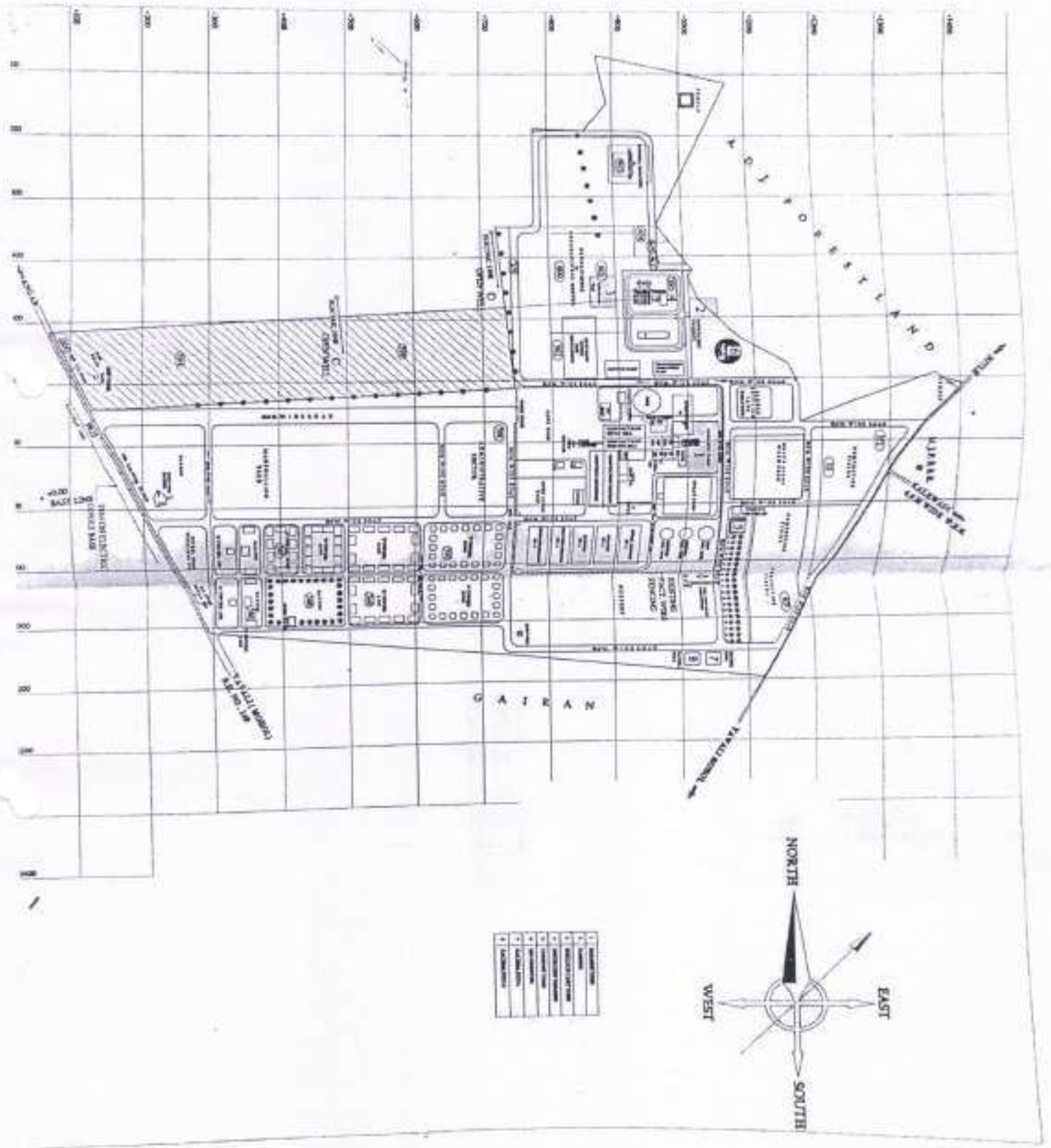


75259/2022/TECH-RD (Pune)

CIN - U74110PN2012PLC141952

LOKNETE BABURAO PATIL AGRO INDUSTRIES LIMITED

LOKNETE SUGAR

• Founder : Rajan Baburao Patil (Ex. MLA) • Chairman : Vikrant (Balraje) Rajan Patil

Loknete/Dist./ 1148 /2020-2021 Date :11/12/2020

To,
The Regional Officer
Maharashtra Pollution Control Board,
Jog Centre, Wakadewadi,
Pune - 411001

Subject: Regarding Submission compliance of action plan.
Reference: As per Your Letter No.MPCB/ROP/MPCB/00/2397 by your letter dated 01/12/2020 sent by email on 04/12/2020

Dear Sir,

We are submitting compliance of action plan as per following.

Sr.	Action plan	Compliance
1	Majority of this spilled out effluent (spent-wash) i.e.80% of this spent wash is collected in the factory premises itself excavating two temporary pits of total capacity of 45 lakh liters. These are towards the flow direction with sizes 45x30x2 m (27 lakh liters) and 30x30x2 m (18 lakh liters), to arrest the flow of effluent (spent-wash)outside the campus of factory. This collected spent wash in kachha pits is filled in tankers through pumps and borough to the 30 days storage tank.	we has provided two temporary pits of total capacity of 4500 m^3. to arrest the flow of effluent (spent-wash) which is filled in tankers through pumps and brought to the 30 days storage tank. Approximately 4400 m^3 spent wash recollected from these temporary emergency pot The work is completed. photo copies enclosed – Annexure - I
2	Inspire of all our efforts, quantity @10% escaped to dry nallah Some of it escaped the premises through drains and ran in to dry-nallah adjacent to industry. That too was quickly stopped in that dry-nallah only, byconstructing*kachabandhara* using 2 nos . of JCB.	Spentwash of that nala spent wash filled in tankers through pumps and borough to the 30 days storage tank, approximately 600 m^3 spentwash hasrecollected and scraping soil collected and storage in compost yard. 70nos of tippers i.e.1050MT Soil stored in compost yard – photo, tankers trips copy enclosed – Annexure – II

Kerale 11/12/2020

महाराष्ट्र प्रदुषण नियंत्रण मंडळ
प्रादेशिक कार्यालय, सोलापूर

Laxminagar, Angar, Tal. Mohol, Dist. Solapur, Maharashtra, Pin-413214.
Tel. : 9022667777 E-mail: lokneteSugar@gmail.com

3	spent wash from Digester tank was found spread in the factory premises at Bagasse Yard, Cane yard, compost yard, Garden area etc.	nearly total 6 Acres area has been covered by the effluent. Industry has scrapping of this polluted soil is collected with the help of 3 excavators and Tippers and this scraped soil transport to compost yard Which will be utilized in composting process along with press mud and fly ash as filler material for making compost. Total scrapping soil is collected 404 Tippers (approx 4700 MT). we has done scrapping of contaminated soi from almost all area where spent wash was spread and collected .- photo, tipers trips copy enclosed – Annexure - III

Sr.	Quantification of expenses done on recovery of spilled effluent (spent wash)	Rs
1	Labour	2,50,000/-
2	Geo-membrane lining	13,61,370/-
3	Hiring of JCB,Dumpers,Dosser	19,30,200/-
4	Pumps,Pipes,wires,starter& other etc.	7,20,180/-
	Total	**42,61,750/-**

Sr.	Description of Items	Quantity
1	Total working days of distillery	20 days
2	Average rate of production **m^3/day or KLPD**	28.123
3	Average rate of spent wash generation **m^3/day**	280
4	Total spent wash generated in 20 days	5600 m^3
5	Spent wash stored in 5 days tankbefore incident	1500 m^3
6	Spent wash feed to digester from 07/11/2020 to 21/11/2020 @ 2 m^3/hr	720 m^3
7	Approximate Quantity of spent wash stored in 30 days storage tank before incident	3380 m^3
8	Capacity of spent wash storage in 30 days storage paka lagoon	9000 m^3
9	Approximate spent wash recollected in 30 days storage as per action plan	5000 m^3
10	Total content of spent washincluding recollected in 30 days storage tank	8380 m^3
11	Previous content of digested spent wash with culture in digester before starting season	5780 m^3
12	Total content of spent wash after fresh feed of spent wash before incident	6500 m^3
13	Total spilled out effluent from the digester during the incident	6500 m^3
14	Approximate spent wash soaked by soil and bagasse & dry nalla.	1500 m^3

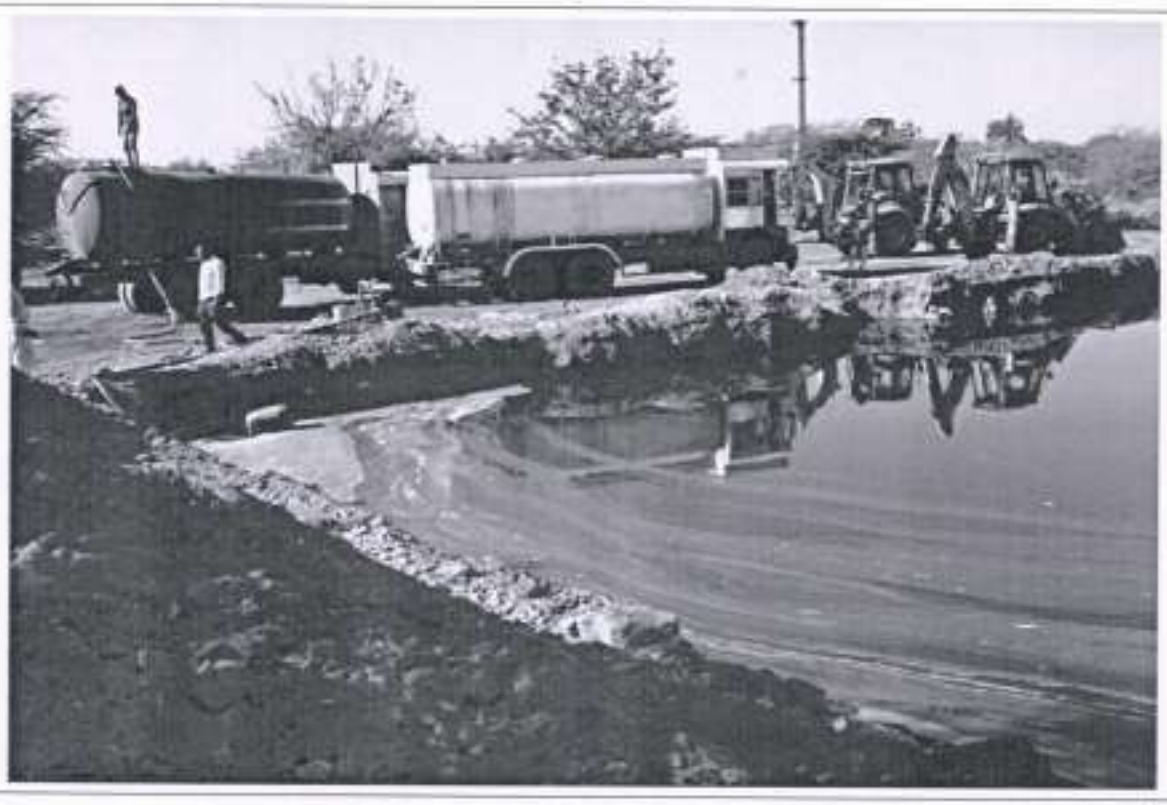
i) Approximate 4700 MT contaminated soil is collected from cane yard, garden, nearby digester area etc by scraping average 10 cm depth,which is stored on 7.5 acres compost yard further treatment

ii) approximate 1050 MT soil is collected from nalla and near kachabhadhara, which is stored on 7.5 acres compost yard for further treatment

iii) **All Lagoons are lined properly with geo-membrane and ensured that there is no possibility of leachates.**

ANNEXURE - I

Kaccha Pits I – (This spent wash filled tanker and borough to the 30 days storage tank.)



Kacha pits –II (This spent wash filled tanker and borough to the 30 days storage tank.)

ANNEXURE – II

Kachabhandhara (This spent wash filled tanker and borough to the 30 days storage tank.)

Annexure - III **Soil Scrapping Collection . (Near Plant)**

Annexure - III **Soil Scrapping Collection . (Near Plant)**

ANNEXURE - III

Soil Scrapping Collection . (Cane Yard)

Annexure - III **Soil Scrapping Collection . (Mango Garden)**

Annexure - III **Soil Scrapping Collection . (Campus area)**

Annexure - III **Baggas Collection . (Baggas Yard)**

Annexure - III **Total Collected Scrapping soil in compost yard.**

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LoknetеBaburao Patil Agro Industries Ltd. Laxminagar, Angar, Tal. Mohol, Dist. Solapur 413 214.

Spentwash recovery Details.(05 Dec-2020 to 11 Dec-2020)

Sr.No	Date	Vehicle No	Capacity ofVehicle	Total Trips	Total
1	5/12/2020	MH-06-AC-6899	20000	6	120000
2	5/12/2020	MH-12-EF-8908	20000	7	140000
3	5/12/2020	MH-45-599	20000	5	100000
4	5/12/2020	MH-43-E-146	20000	4	80000
5	5/12/2020	MH-12-FC-8071	20000	6	120000
6	5/12/2020	MH-25-5601	7000	7	49000
7	5/12/2020	MH-06-G-6786	2500	6	15000
				Total	624000
1	6/12/2020	MH-06-AC-6899	20000	6	120000
2	6/12/2020	MH-12-EF-8908	20000	7	140000
3	6/12/2020	MH-45-599	20000	6	120000
4	6/12/2020	MH-43-E-146	20000	8	160000
5	6/12/2020	MH-12-FC-8071	20000	6	120000
6	6/12/2020	MH-25-5601	7000	7	49000
7	6/12/2020	MH-06-G-6786	2500	9	22500
				Total	731500
1	7/12/2020	MH-06-AC-6899	20000	7	140000
2	7/12/2020	MH-12-EF-8908	20000	6	120000
3	7/12/2020	MH-45-599	20000	8	160000
4	7/12/2020	MH-43-E-146	20000	7	140000
5	7/12/2020	MH-12-FC-8071	20000	5	100000
6	7/12/2020	MH-25-5601	7000	6	42000
7	7/12/2020	MH-06-G-6786	2500	7	17500
				Total	719500
1	8/12/2020	MH-06-AC-6899	20000	5	100000
2	8/12/2020	MH-12-EF-8908	20000	7	140000
3	8/12/2020	MH-45-599	20000	8	160000
4	8/12/2020	MH-43-E-146	20000	6	120000
5	8/12/2020	MH-12-FC-8071	20000	7	140000
6	8/12/2020	MH-25-5601	7000	8	56000
7	8/12/2020	MH-06-G-6786	2500	7	17500
				Total	733500
1	9/12/2020	MH-06-AC-6899	20000	6	120000
2	9/12/2020	MH-12-EF-8908	20000	6	120000
3	9/12/2020	MH-45-599	20000	8	160000
4	9/12/2020	MH-43-E-146	20000	6	120000
5	9/12/2020	MH-12-FC-8071	20000	7	140000
6	9/12/2020	MH-25-5601	7000	8	56000
7	9/12/2020	MH-06-G-6786	2500	7	17500
				Total	733500
1	10//12/2020	MH-06-AC-6899	20000	5	100000

2	10//12/2020	MH-12-EF-8908	20000	6	120000
3	10//12/2020	MH-45-599	20000	8	160000
4	10//12/2020	MH-43-E-146	20000	6	120000
5	10//12/2020	MH-12-FC-8071	20000	7	140000
6	10//12/2020	MH-25-5601	7000	7	49000
7	10//12/2020	MH-06-G-6786	2500	8	20000
				Total	709000
1	11/12/2020	MH-06-AC-6899	20000	6	120000
2	11/12/2020	MH-12-EF-8908	20000	7	140000
3	11/12/2020	MH-45-599	20000	6	120000
4	11/12/2020	MH-43-E-146	20000	7	140000
5	11/12/2020	MH-12-FC-8071	20000	8	160000
6	11/12/2020	MH-25-5601	7000	7	49000
7	11/12/2020	MH-06-G-6786	2500	8	20000
				Total	749000
Total recovery of Spent wash = 5000000/- liters (5000 m3)					

LokneteBaburao Patil Agro Industries Ltd. Laxminagar, Angar, Tal. Mohol, Dist. Solapur 413 214.			
Scrapping Soil Collection Details.(06 Dec-2020 to 11 Dec-2020)			
Sr.No	Date	Tipar No	Total Trips
1	6/12/2020	MH-25-GC-521	15
2	6/12/2020	MH-04-FD-8164	14
3	6/12/2020	MH-25-B-7940	10
4	6/12/2020	MH-25-520	8
5	6/12/2020	MH-25-9799	8
Total			55
1	7/12/2020	MH-25-GC-521	15
2	7/12/2020	MH-04-FD-8164	16
3	7/12/2020	MH-25-B-7940	14
4	7/12/2020	MH-25-520	15
5	7/12/2020	MH-25-9799	15
Total			75
1	8/12/2020	MH-25-GC-521	17
2	8/12/2020	MH-04-FD-8164	16
3	8/12/2020	MH-25-B-7940	15
4	8/12/2020	MH-25-520	17
5	8/12/2020	MH-25-9799	16
Total			81
1	9/12/2020	MH-25-GC-521	18
2	9/12/2020	MH-04-FD-8164	17
3	9/12/2020	MH-25-B-7940	15
4	9/12/2020	MH-25-520	16
5	9/12/2020	MH-25-9799	17
Total			83

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1	10/12/2020	MH-25-GC-521	20
2	10/12/2020	MH-04-FD-8164	15
3	10/12/2020	MH-25-B-7940	13
4	10/12/2020	MH-25-520	15
5	10/12/2020	MH-25-9799	18
Total			**81**
1	11/12/2020	MH-25-GC-521	21
2	11/12/2020	MH-04-FD-8164	19
3	11/12/2020	MH-25-B-7940	20
4	11/12/2020	MH-25-520	21
5	11/12/2020	MH-25-9799	18
Total			**99**
TotalTrips			**474**

This is for your information and kind consideration.

Thanking you.
Yours faithfully,

(O.S.Jogade)
CHIEF EXECUTIVE OFFICER

Copy to : SRO, MPCB,Solapur

MAHARASHTRA POLLUTION CONTROL BOARD
SUB REGIONAL OFFICE, SOLAPUR

ACTION PLAN VERIFICTION REPORT

1. Name & Address of the Industry : M/S.LOKNETE BABURAO PATIL AGRO INDUSTRIES LTD. (Distillery Unit) 601, 592, Laxmi Nagar, Angar, Tal. - Mohol, Dist – Solapur
2. Date of Visit : 11/12/2020
3. Ind. Category : RED/LSI
4. Industry Commissioning date : January 2010
5. Consent Status : Format 01/CAC/UAN No. MPCB/Consent 000092544, CR-2008000662, dated 19/08/2020, Valid up to 31/08/2021.

6 As per consent product list, Qty and Production Details:

Sr.No.	Name of Product	Consent Quantity
1	Rectified Spirit Or	900 KL/M
2	Extra Neutral Alcohol Or	600 KL/M
3	Ethanol	900 KL/M
4	Fusel Oil	1.8 MT/M
Molasses Based Distillery Capacity 30 KLPD		

7. Environmental Clearance Details:
   Industrial has obtain Environment Clearance F.No.-J-11011/473/2006/IA-II, (I) Dated 19/05/2008 for molasses based distillery unit 30 KLPD –Copy Enclosed.
8. Distillery unit was not in operation in season 2019-2020, due to shortage of sugar cane. Now, for this season Distillery unit has started from 02/11/2020 and spent wash feeding to the Digester was started from 07/11/2020 after 5 days tank level was saturated.
9. Accident was occurred at midnight of 21/11/2020 in to the distillery division at biogas digester tank. In this respect industry reported to this office on 22/11/2020. Accordingly, this office has visited to accident site of the distillery unit on same day and inspected the accident site along with factory representatives. During the visit instruction given to the factory representative that immediately stop runoff spent wash spread in to the nearby area by providing small bhandhara and to collecte spent wash by tankers and transport to 30 days concert lagoon. Scrape the contaminate soil with spent wash immediately, and contaminated soil store on 7.5 acre concert compost yard for further compost process. accordingly submit action plan immediately.
10. The visit report was submitted to RO for proposed legal action on 25/11/2020.

11. Industry has submitted letter for voluntary shut down of distillery unit on 22/11/2020 and stopped operation from 22/11/2020.

12. Board has issued directions on 01/12/2020 under section 32 and 33 A of water (prevention and control of pollution) Act 1974 and under section 31A of Air (Prevention and control of pollution) Act 1981 and directed that to stop industrial activities and not to resume your manufacturing till your complete restoration and remediation of affected land / soil

13. Industry has submitted Action plan and action taken report on 05/12/2020, in response to board directions.

14. This office has visited on 11/12/2020 for checking compliance of action taken and action plan, submitted by industry.

Observations :

1. It is observed that, industry has already collected majority of spilled out spent-wash in the factory premises by excavating two temporary pits of total capacity of 45 lakh liters. These pits are provided towards the flow direction of spent wash with sizes 45x30x2 m (27 lakh liters) and 30x30x2 m (18 lakh liters), to arrest the flow of spent-wash .This spent wash collected in kachha pits is filled in tankers through pumps and brought to the 30 days storage tank. Industry has recollected approximate 4400 m^3 spent wash from both these temporary emergency pits.
2. Industry has collected spent wash runoff from nearby nalla obstructed by constructing temporary kachha Bandhara. This collected spent wash is filled in tankers through pumps and brought to the 30 days storage tank. Then scrapped contaminated soil is collected and stored in concrete compost yard. Industry has recollected approximately 600 m^3 spent wash from temporary kachha bandhara and approximately scrapped contaminated soil from nalla is about 70 Nos. of Tippers i.e. 1050 MT soil is stored on 7.5 acres compost yard. (Photo copy attached)
3. Approximately 1500 m^3 of spent wash spread in campus such as nearby garden, cane yard , bagasse yard , nallah etc which was soaked by nearby soil and bagasse . Approximately 6 Acres i.e. approximate 24282 sq/m area has been covered by those spentwash. Industry has scrapped of that contaminated soil, collected with the help of 3 excavators and this scraped soil is transported to compost yard through tippers which will be utilized in composting process along with press mud and fly ash as filler material for making compost. Total scrapped soil is collected 404 Tippers (approx 4700 MT). Industry has done scrapping of contaminated soil from almost all area where spent wash was spread and that contaminated soil is transported and stored to compost area industry having 7.5 acre concrete compost yard as per CREP norms. Concrete compost yard having sufficient space to store the scrapped contaminated soil. Spent wash is mixed with bagasse in bagasse yard has dried and incinerated in bagasse fired Boiler using as fuel.

4. Details of Bio-digester:

1) Bio-Digester: 1 Nos.
2) Capacity : 9600 m^3 approx.
3) Size : 26 M dia x 18 Mtr. Ht.
4) MOC : M.S.
5) Make : Eco Board Limited , Pune-411004
6) Provision of Safety Dives's (Over/under pressure release dives) : 1 No. MOC SS 304 on diagester roof
7) Bio digester having with railing/staircase to make digester easily accessible
8) Safety Vent valve: 6 inch 1No.
9) Previous content of digested spentwash with culture in digester before starting season : 5780m3

5. Gas Holder Details

a)Capacity : 300 m3
b) Diameter: 8 meter approx
c) Height: 6 meter
d) Plate thickness: 6mm
e) Basin: M.S.
f) Floating drum: M.S. with FRP 2mm/clear Epoxy coating inside and synthetic enamel paint outside. Gasholder should be painted with anticorrosive butiminised paint inside the gas zone.

6) As per Bio-digester manufacture Eco board manual methane gas generation will start after 6-8 weeks from starting of spent wash feed.
7) Industry has provided HDPE pipe line from biogas plant to boiler.

8) Details of spent wash Lagoon

1) 5 days concrete Lagoon – Capacity :1500 m3
2) 30days concrete Lagoon – Capacity : 9000 m3

9.Detailed scenario of spent wash generation and storage from starting of distillery i.e. 02/11/2020 to the date of incidence i.e. up to 21/11/2020.

Sr.No.	Description of Items	Quantity	Remarks
1	Total working days of distillery	20 days 02/11/2020 to 21/11/2020	
2	Average production per day as per excise register	28.123 KLPD	
3	Daily rate of spent wash generation	280 m^3/day	
4	Total spent wash generated in 20 days	5600 m^3	
5	5 days concrete Lagoon as per CREP norms	Capacity : 1500 m3	
6	Spent wash stored in 5 days tank before incident	1500 m^3	
7	30 days concrete Lagoon as per CREP norms	Capacity: 9000 m^3	
8	Approximate Quantity of spent wash stored in 30 days storage tank before incident	3380 m^3	
9	Approximate spentwash recollected in 30 days storage as per action plan	5000 m^3	
10	Total content of spent wash including recollected in 30 days storage tank	8380 m^3	
Bio-Digester spentwash details :			
11	Previous content of digested spentwash with culture in digester before starting season	5780 m^3	
12	Spent wash feed to digester from 07/11/2020 to 21/11/2020 @ 2 m^3/hr	720 m^3	
13	Total content of spentwash after fresh feed of spentwash before incident	6500 m^3	
After the incident spentwash spreded			
14	Total spilled out spentwash from the digester during the incident	6500 m^3	i) Approximate 4700 MT contaminated soil is collected from cane yard, garden, nearby digester area etc by scraping average 10 cm depth ,which is stored on 7.5 acres compost yard further treatment
15	Approximate spentwash	1500 m^3	

	soaked by soil and bagasse		ii) approximate 1050 MT soil is collected from nalla and near kacha bhadhara, which is stored on 7.5 acres compost yard for further treatment.
16	Approximate spentwash recollected in 30 days storage as per action plan	5000 m^3	

10. During the visite industry representative stated that total spentwash contaminated soil approximate 5750 MT will be convert in to compost before rainy season and as per technical expert opinion by VSI,pune

11. During the visit photographs are snatched of the compost yard. Kacha lagoon, garden area, bagasse yard, cane yard, scrapped soil area, various location of scrapped soil area etc

12. During the visit nearby borewell, open well ,water samples and, soil samples are collected from ,scrapped contaminated soil at garden, nearby digester and after scrapping of contaminated soil.

Prashant Bhosale
I/c.Sub Regional Officer,Solapur

Loknete Baburao Patil Agro Ind. Ltd.,
Laxminagar, Angar. Ta. - Mohol, Dist. Solapur.

Annexure-IXA&B

1) Visited above factory premises on dtd. 22/11/2020 at 2:30 p.m. after receiving information about dangerous occurence which took place inside the factory on dtd. 21/11/2020 at around 11:45 pm in Distillery section.

2) Information of accident was given by Shri. Anil pawar (Head time keeper) on dtd. 22/11/2020 at 9:00 am.

3) Shri. Anil Pawar (Head time keeper) & Shri. R.M. Awhatade (Distillery Manager) are present with me.

4) Visited incident spot, took photographs of spot, obtained details of Biodigester & Xerox of register of dangerous occurences + accident. Also obtained Attendance sheet of workers

5) Recorded statement of shri. Mauli Pawar, age-27 (Distillery chemist).

Best Medical treatment shall be given to injured person

Detail visit remark shall be forwarded by post

P.V. Surse
Dy. Director
Z. S.T.I
Solapur.

Jogale D.S.
Chief Executive Officer

75259/2022/TECH-RD (Pune)

(4)

Govt. of Maharashtra
Directorate of Industrial Safety and Health

माहितीचा अधिकार

By R.P.A.D / By Hand

No.DDISH/Accd/PVS/541 /2020
Office of the Deputy Director,
Industrial Safety and Health,
105, Sakhar Peth, Solapur.
Date :- 09 DEC 2020

Loknete Baburao Patil Agro Industries Ltd.,
Laxminagar, Angar, Tq.- Mohol, Dist.- Solapur.

1. This remark shall be read in continuation with the previous visit remarks passed in this factory during my visit on dated 22/11/2020.

2. My office received telephonic information on dated 22/11/2020 at 9.30 am about fatal accident which was occurred on dated 21/11/2020 at 11.45 pm.

3. During visit, I took photographs of spot, obtained details of Bio-digester. Also obtained photocopies of register of Accident and dangerous Occurrences. Also recorded the statement of Shri. Mauli Pawar (Distillery Chemist) on dtd. 22/11/2020 in a factory.

4. The above said factory is registered under Factories Act, 1948 in which manufacturing process of making of sugar, ethanol from sugarcane is carried out. The licence No. 10014458 is renewed up to year 2020 for 500 workers and above 2000 HP.

5. Again visited the factory on dtd. 24/11/2020 along with Shri. H.R.Dhend, Jt. Director, Industrial Safety and Health, Pune-2. Factory found working. Observed the accident spot, took photographs. Shri. D.S. Jogade (C.E.O.) was present. I have recorded statement of witness Shri. Ravindra Gajendra Kakde (Biogas Plant Operator) & Shri. Kallapa Kisan Gurav (Watchman) in Siddheshwar Hospital, Solapur on dtd 23/11/2020.

6. I had visited factory on dtd. 23/08/2019. Factory found not working due to off season. I instructed orally to HR manager that safety measures to be adopted before re-starting the manufacturing process.

7. **About the Biogas manufacturing process:** - From the statement & actual observation, my enquiry revealed that, the above factory is engaged in manufacturing of white sugar, power generation of 17 MW using fuel as bagasse of sugarcane, Biogas (Methane). The factory is also engaged in manufacturing of ethanol & alcohol from sugar molasses by distillation process. In distillery division of the factory, there is one distillery for manufacturing of ethanol (30 KLPD). The sugar molasses produced in the sugar plant of the factory is used as raw material in the distillery where Ethanol & Alcohol are manufactured. In this distillation process, the unwanted residual liquid waste i.e Distillery Spent Wash is generated. This Distillery Spent Wash is sent to the Biogas Digester Tank as a raw material.

In this Factory, Biogas plant is situated outside the distillery section & The East side of the factory. Biogas (Methane) is generated from biogas plant. Biogas plant includes Biogas Digester, Lamella Clarifier. Biogas Holder, Gas flare unit, Laboratory, feed pump & sludge recycle pump. Spent wash i.e effluent from distillery unit is received in to R.C.C.receiving tank (sludge settling tank, five day holding capacity). Suspended solids settled in this tank are removed after stoppage of distillery. Clear effluent after getting mixed with recycled biomass from lamella clarifier to maintain a feed temperature of 36 to 38 ^{0} C is pumped to the Digester. At about 14 m^3 Distillery Spent Wash is feed on per hr basis to the Biogas Digester Tank. The feed rate is controlled by manual control valve & a flow meter provided in the feed line and the sludge recycling line. Then approximately 30 kg/day lime and adequate water is added in the Distillery Spent Wash stored in the Digester Tank. Also cow dung as a culture is added in the mixture for generation of Biogas. In the digester, the effluent gets further mixed with content of the digester with the help of central & lateral agitators which provide homogeneous mixing in the digester. The digester has about 24-25 days retention capacity. Anaerobic digestion takes place in the digester, as a result of which BOD/COD is reduced and biogas is evolved. The digested effluent/ biomass mixture overflow into degassing pond where entrapped gases are released. Degassed effluent flows to Lamella Clarifier for separation of active biomass from outgoing treated effluent. The clarified effluent leaves the lamella clarifier for disposal or to secondary effluent treatment plant, while the separated biomass is pumped back continuously in

to the Digester. The excess biomass is removed from the bottom of digester regularly to sludge beds for disposal or to form manure. Due to anaerobic digestion, biogas which is the mixture of 65 % of Methane gas & 35 % of CO_2 gas produced in the digester accumulates in digester roof. The generated Biogas is transferred from the top of the Biogas Digester Tank to Biogas Holder Tank (Diameter- 8 m, Ht.- 6m, capacity- 300m^3) which is installed at a distance of 20 ft. from the Biogas Digester Tank. The gas holder acts as intermediate gas storage as well as a Pressure control vessel. The biogas is pumped to the boiler house by biogas blower. Excess gas, if any, is burnt in gas flare unit whenever gas is not being utilized in the boiler. There was about 65 lakh liter spent wash in the Biogas Digester.

The details of Biogas digester Tank :-

1) Tank Shape – Cylindrical.
2) Tank Capacity – 96,00,000 litre
3) Height – 18 mtr.
4) Diameter – 26 mtr.

One center Mounted Vertical Agitator is provided on the top of the Digester Tank, 3 lateral agitators are given at the bottom level of the tank. One manhole is provided on the side shell wall of the tank at bottom level and two manhole is provided on the top Dome of the tank.

8. **About Incidence -:** From the statement, my enquiry revealed that on the day of incident i.e. on dated 21/11/2020, manufacturing process of making sugar from sugarcane was being carried out. Distillery section also started from 02/11/2020. On 07/11/2020, spent wash feeding @ 2 m^3/hr was started to biodigester. Shri. Ravindra Kakde (Biogas Plant Operator) joined duty at 8.00 pm in night shift (8.00pm to 4.00pm) along with his colleague Shri. Suresh Chavan (Helper). Both were working in Biogas plant. Shri. Kakde was looking after Bio Gas Plant Operation.Shri. Kakde took the charge of night shift from second shift Biogas Plant Operator Shri. Ram Tormal. As usual, Spent wash produced in distillery was transferred to Bio Digester. At early stage, Methane generation was not started. Manhole on the roof of Digester Tank & vent kept open. Hence pressure was not developed inside the Digester. When methane gas generation starts, Then Vent and manhole of the digester kept closed. This methane gas is stored in Gas Holder. Shri. Kakde took the sample of spent wash in the digester for analysis. Then at around 11.45 pm, Shri. Kakde & Shri. Chavan were sitting outside the lab. Shri. Kakde heard sound from Digester which is 10 ft away from him. He

7

went towards the Digester Tank. He noticed Spent Wash was released from crack developed at the Bottom of Tank. He turns around in fear. Within a fraction, welded bottom plate of the Digester Tank got sheared off and upper portion of tank fell on the ground. This resulted in heavy flow of spent wash (appro.65 lac litres) in all over surrounding area i.e bagasse yard, cane yard, composter yard garden etc. Due to heavy flow of spent wash, the above two workers & Shri.Jyotiram Dada Vagare working in nearby area were thrown away. Shri. Kakde hold branch of tree while Shri. Chavan & Shri. Vagare were bombarded on factory structure / machinery resulting in serious head injuries & fractures. Also due to pungent smell of spread spent wash, 8 workers working in nearby area became unconscious. All 10 workers were immediately shifted to the Siddheshwar Hospital, Solapur through factory vehicle. Two workers declared dead in the Siddheshwar Hospital, Solapur during treatment on 21/11/2020. After giving necessary first aid treatment, other seven workers were discharged from the Siddheshwar Hospital, Solapur on dated 24/11/2020 & last one worker Shri. Kakde was discharged from Siddheshwar Hospital, Solapur on dtd. 26/11/2020. As per Post Mortem reports, Shri. Kakde & Shri. Vagare died due to Head injuries.

In this incident, Biogas Digester tank & it's accessories like feed pump, motor, sludge recycle pump, lamella clarifier shell, Gas holder, gas flare equipment, safety device, biogas blower etc. Also walls & panel of laboratory got damaged due to heavy flow of spent wash. Factory management reported that in this incident, Machinery/equipment, structure loss of Appro. Rs.3,10,000,00 took place. These machineries/equipments are covered under insurance policy.

The details of workers died/injured are as follows-:

Sr. No.	Name of worker	Age about	Nature of work	Dt. of discharged
1.	Shri. Jyotiram Dada Vagare	45 yrs.	Pumpman	Expired on 21/11/2020 at Siddheshwar hospital, Solapur.
2.	Shri. Suresh ankush Chavan	22 yrs.	Helper	Expired on 21/11/2020 at Siddheshwar hospital, Solapur.

3.	Shri.Sajjan Balu Jogdand	20yrs.	Pumpman	Discharged on 24/11/2020 from Siddheshwar Hospital, Solapur.
4.	Shri. Mangesh Namdeo Pachpund	24 yrs.	Helper	Discharged on 24/11/2020 from Siddheshwar Hospital, Solapur.
5.	Shri. Mahesh Dilip Bodke	20 yrs.	Helper	Discharged on 24/11/2020 from Siddheshwar Hospital, Solapur.
6.	Shri. Kalyan Kisan Gurav	29yrs.	Watchman	Discharged on 24/11/2020 from Siddheshwar Hospital, Solapur.
7.	Shri. Parmeshwar Madhukar Thite	25 yrs.	Helper	Discharged on 24/11/2020 from Siddheshwar Hospital, Solapur.
8.	Shri.Raju Dattatraya Gaikwad	20 yrs.	Helper	Discharged on 24/11/2020 from Siddheshwar Hospital, Solapur.
9.	Shri. Ravindra Gajendra Kakde	29 yrs.	Biogas Operator	Discharged on 26/11/2020 from Siddheshwar Hospital Solapur.
10.	Shri. Sanjay Bajirao Panche	54 yrs.	Contractor	Discharged on 24/11/2020 from Siddheshwar Hospital, Solapur.

9. **Contravention of Section 7- A(2)(a) of Factories Act,1948-:**

As per provision of Sec. 7-A(2)(a) of factories Act, 1948 Every occupier shall ensure so far as reasonably practicable, the health, safety and welfare of all workers while they are at work in the factory. It shall include the provision of maintenance of plant and system of work in the factory that are safe & without risk to health.

From enquiry and statement of workers, it is revealed that, welded bottom plate of the Bio digester got sheared off and spent wash spill on the ground. This Bio digester was installed in year 2009 & is being used for production of biogas till date. Bio digester is of S.S. material having welded bottom plate. Spent wash stored in Biodigester is corrosive & acidic in nature. On the day of accident, worker working nearby noticed some leakage of spent

wash from crack in welded joint of bottom plate of Bio digester. Within fraction of second, due to heavy pressure& weight of inside spent wash, the entire bottom plate abruptly got sheared off and bio digester fell on the floor resulting into spillage of spent wash in the premises. Due to heavy flow of spent wash, 3 workers working in that area were thrown away along spent wash. Therefore it appears that bottom plate of the Bio digester was not in sound condition. If welded bottom plate of the Bio digester was maintained in sound condition & was kept free from any corrosion, wear etc, spent wash would not have leaked from Bio digester and would have avoided the incident.

Thus Bio digester & it's welding were not properly maintained in safe working condition and was with risk to the safety of workers working there as such the provision of Section 7- A(2)(a) of Factories Act,1948 has been contravened by the occupier.

10. **Contravention of Rule 65(2)(b)(c) of Maharashtra Factories Rules,1963:**

As per provision of Rule 65(2)(b)(c) of Maharashtra Factories Rules,1963: Every pressure vessel used in any factory shall be (b) of sound construction& material and of adequate strength and shall be free from any defect; and (c) properly maintained in a safe working condition.

Bio digester which was operated at a pressure of 3 Kg/cm2 (gauge pressure) i. e. greater than atmospheric pressure. This is a pressure vessel within the meaning of Rule 65 (1)(d) of MFR 1963 being used in the manufacturing process of biogas..

From on spot enquiry and statement of workers, it is revealed that, welded bottom plate of the Bio digester got sheared off and spent wash spill on the ground. This Bio digester was installed in year 2009 & is being used for production of biogas till date. Bio digester is of S.S. material having welded bottom plate. On the day of accident, worker working nearby noticed some leakage of spent wash from welded joint of bottom plate of Bio digester. Within fraction of second, the entire bottom plate got sheared off and bio digester fell on the floor resulting into spillage of spent wash in the premises. Due to heavy flow of spent wash, 3 workers working in that area were thrown away along spent wash. Therefore it appears that bottom plate of the Bio digester was not in sound construction & its welding is ofnot having adequate strength. If welded bottom plate of the Bio digester was maintained in sound condition & was kept free from any corrosion, wear etc, spent wash would not have leaked from Bio digester and would have avoided the incident. Thus workers could have been saved.

Thus Bio digester & it's welding were not properly maintained in safe working condition and was with risk to the safety of workers working there as such the provision of Rule 65(2)(b)(c) of Maharashtra Factories Rules,1963 has been contravened by the occupier.

11. **Contravention of Rule 65(4)(a)(b)(c) of the M.F.R. 1963 -:**

Bio digester which was operated at a pressure of 3 Kg/cm2 (guage pressure) i. e. greater than atmospheric pressure. This is a pressure vessel within the meaning of Rule 65 (1) (d) of MFR 1963 being used in the manufacturing process of biogas.

The pressure plant in service shall be thoroughly examined by a competent person

a) Externally once in every period of six months
b) Internally ,once in every period of twelve months and
c) Hydraulic test once in a period of four years.

I asked factory manager to show the pressure vessel test report in Form 13 as per provision of Rule 65(4)(a)(b)(c) of the Maharashtra Factory Rule 1963. It is learned that last examination was carried out in October 2018. On the day of incident dtd. 21/11/2020 & also on the day of my visit to above said factory on dtd. 22/11/2020, I found that biodigester did not got thoroughly examined from competent person as stated above & hence the Occupier of the factory hence contravened the provisions of Rule 65(4)(a)(b)(c) of the Maharashtra Factory Rule 1963.

12. **Contravention of Rule 65(6) (ii) of Maharashtra Factories Rules, 1963:**

During enquiry it is learnt that last crushing season of factory ended on 21/02/ 2018 and new season started from 21/10/2020. Plant was idle for this period i. e. 3 months & no manufacturing process was carried out during this period. Bio digester which was operated at a pressure of 3 Kg/cm2 (guage pressure) continues a pressure vessel as define under rule 65 (1)(d) of MFR 1963 being used in the manufacturing process.

As per provision of 65 (6) (ii) , "No pressure plant or pressure vessel which has been previously used or has remain isolated or idle for period exceeding 6 months or which has undergone repairs or alternations shall be used in a factory unless it is examined and tested by a competent person. Hence it is mandatory on the part of occupier to carry out testing of this pressure vessel which was idle for a period exceeding 6 months.

It is observed at the time of my visit that said pressure vessel i.e. Bio digester was not examined and tested by a competent person before taken into the use for current crushing season on datd 21/10/2020.

(11)

Hence by not getting examined and tested the above said Bio digester by a competent person before taken into the use which was idle for period exceeding 6 months, the provision of rule 65 (6) (ii) of Maharashtra Factories Rules, 1963 has been contravened.

13. Remedial Measures: To avoid reoccurrence of such incidence in future following remedial measures are suggested:

i. Maintenance of all plant, machineries, fittings, piping, pressure vessels, gasket etc. shall be carried out to ensure that they were in sound condition and without risk to the safety of workers.
ii. Periodical maintenance of the storage tanks shall be carried out.
iii. Periodical testing & examination of tanks shall be carried out.
iv. Every pressure vessel shall be got tested hydraulically at the interval of Two years.

14. The occupier/Manager of the factory is instructed that,

i Compensation as per Employee's Compensation Act, 1923 shall be given to legal heirs of deceased worker & suitable employment shall be given to family member of deceased workers.
ii. To pay substantial amount as an ex-gratia payment to the legal heir of deceased workers.
iii. To provide employment to the nearest relative of the deceased workers.

15. Show Cause Notice: The Occupier shall explain and show causes, if any, within seven days that why legal action may not be considered against them for the above said contravention.

Received by me
Anil Govind Pawar
9552557571
16/12/2022

(P. V. Surse)
Deputy Director,
Industrial Safety and Health,
Solapur.

75259/2022/TECH-RD (Pune)

(12)

Annexure-X

महाराष्ट्र शासन

औद्योगिक सुरक्षा व आरोग्य संचालनालय, सोलापूर

१०५, साखर पेठ , सोलापूर ४१३००५

दुरध्वनी क्रमांक ०२१७-२६२६५७७,२६२६२३० ई-मेल dydish.sol-mh@gov.in

RPAD / By Hand

जा.क्र.औसुवआसो/कादानो /542 /२०२०

दिनांक : 10 DEC 2020

प्रति,

Shri. PRAKASH JANARADHAN CHAVARE
Occupier
Loknete Baburao Patil Agro Industries Ltd.,
Laxminagar, Angar, Tal.- Mohol, Dist.- Solapur.

विषय :- <u>कारणे दाखवा नोटीस</u>

Show cause Notice

महोदय,

आपले लक्ष माझे दिनांक दि. २२/११/२०२०.रोजीच्या सविस्तर शेरे मधील / विशेषत : शेरे क्र.०९,१०,११ & १२ कडे वेधण्यात येत असून आपणास कळविण्यात येते आहे की त्यामध्ये कारखाने अधिनियम १९४८ च्या खालील तरतुदीचा भंग दाखविण्यात आलेला आहे.

- **<u>Section 7 A (2)(a) of The Factories Act, 1948</u>**
- **<u>Rule 65(2)(b)(c) of The Maharashtra Factories Rules 1963</u>**
- **<u>Rule 65(4)(a)(b)(c) of The Maharashtra Factories Rules 1963</u>**
- **<u>Rule 65(6) (ii) of The Maharashtra Factories Rules, 1963</u>**

तरी आपणांस कळविण्यात येत आहे की वरील उल्लंघनाबाबत आपणाविरुध्द कायदेशीर कारवाई का करु नये ? सदर नोटीस मिळल्यापासून सात दिवसाच्या आत तीन प्रतीत या कार्यालयास खुलासा कळवावे. जर विहीत कालावधीत काही खुलासा प्राप्त झाला नाही तर आपणांस खुलासा सादर करावयाचा नाही असे समजून योग्य ती कायदेशीर कारवाई केली जाईल यांची नोंद घ्यावी.

(प्र.वि.सुरसे)
उपसंचालक
औदयोगिक सुरक्षा व आरोग्य, सोलापूर

Received by me
Anil Govind Pawar
9552557511
16.12.2020

75259/2022/TECH-RD (Pune)

o/c

Annexure-XI

IN THE COURT OF CHIEF JUDICIAL MAGISTRATE, SOLAPUR, AT SOLAPUR

STC No. 4383/2020

State of Maharashtra
At the instance of
Shri. P. V. Surse (Age 42) ------- **The Complainant**
Deputy Director
Industrial Safety & Health, Solapur
& Inspector u/s 8 of the Factories Act-1948.

V/s

Shri. PRAKASH JANARADHAN CHAVARE (Age 52) --------- **Accused**
Occupier
Loknete Baburao Patil Agro Industries Ltd.,
Laxminagar, Angar, Tal.- Mohol, Dist.- Solapur.

OFFENCE UNDER THE PROVISIONS OF Section 7 A (2)(a) of The Factories Act, 1948, Rule 65(2)(b)(c) of The Maharashtra Factories Rules 1963, Rule 65(4)(a)(b)(c) of The Maharashtra Factories Rules 1963 & Rule 65(6) (ii) of The Maharashtra Factories Rules, 1963 PUNISHABLE U/S 92 OF THE FACTORIES ACT-1948.

May it please your honour,

The complainant Shri. P. V. Surse Deputy Director, Industrial Safety & Health, Solapur of the Factories Act -1948, wants to state solemnly as follows.The accused is the Occupier of Loknete Baburao Patil Agro Industries Ltd.,Laxminagar, Angar, Tq.- Mohol, Dist.- Solapur. The factory situated within the jurisdiction of this court.

1. This remark shall be read in continuation with the previous visit remarks passed in this factory during complainant visit on dated 22/11/2020.
2. Complainant office received telephonic information on dated 22/11/2020 at 9.30 am about fatal accident which was occurred on dated 21/11/2020 at 11.45 pm.

3. During visit, Complainant took photographs of spot, obtained details of Bio-digester. Also obtained photocopies of register of Accident and dangerous Occurrences. Also recorded the statement of Shri. Mauli Pawar (Distillery Chemist) on dtd. 22/11/2020 in a factory.

4. The above said factory is registered under Factories Act, 1948 in which manufacturing process of making of sugar, ethanol from sugarcane is carried out. The licence No. 10014458 is renewed up to year 2020 for 500 workers and above 2000 HP.

5. Complainant again visited the factory on dtd. 24/11/2020 along with Shri. H.R.Dhend, Jt. Director, Industrial Safety and Health, Pune-2. Factory found working. Observed the accident spot, took photographs. Shri. O.S. Jogade (C.E.O.) was present. Complainant have recorded statement of witness Shri. Ravindra Gajendra Kakde (Biogas Plant Operator) & Shri. Kallapa Kisan Gurav (Watchman) in Siddheshwar Hospital, Solapur on dtd 23/11/2020.

6. Complainant had visited factory on dtd. 23/08/2019. Factory found not working due to off season. Complainant instructed orally to HR manager that safety measures to be adopted before re-starting the manufacturing process.

7. **About the Biogas manufacturing process:** - From the statement & actual observation, complainant's enquiry revealed that, the above factory is engaged in manufacturing of white sugar, power generation of 17 MW using fuel as bagasse of sugarcane, Biogas (Methane). The factory is also engaged in manufacturing of ethanol & alcohol from sugar molasses by distillation process. In distillery division of the factory, there is one distillery for manufacturing of ethanol (30 KLPD). The sugar molasses produced in the sugar plant of the factory is used as raw material in the distillery where Ethanol & Alcohol are manufactured. In this distillation process, the unwanted residual liquid waste i.e Distillery Spent Wash is generated. This Distillery Spent Wash is sent to the Biogas Digester Tank as a raw material.

In this Factory, Biogas plant is situated outside the distillery section & The East side of the factory. Biogas (Methane) is generated from biogas plant. Biogas plant includes Biogas Digester, Lamella Clarifier. Biogas Holder, Gas flare unit, Laboratory, feed pump & sludge recycle pump. Spent wash i.e effluent from distillery unit is received in to R.C.C.receiving tank (sludge settling tank, five day holding capacity). Suspended solids settled in this tank are removed after stoppage of distillery. Clear effluent after getting mixed with recycled biomass from lamella clarifier to maintain a feed temperature of 36 to 38 ^{0} C is pumped to the Digester. At about 14 m^3 Distillery Spent Wash is feed on per hr basis to the Biogas Digester Tank. The feed rate is controlled by manual control valve & a flow meter provided in the feed line and the sludge recycling line. Then approximately 30 kg/day lime and adequate water is added in the Distillery Spent Wash stored in the Digester Tank. Also cow dung as a culture is added in the mixture for generation of Biogas. In the digester, the effluent gets further mixed with content of the digester with the help of central & lateral agitators which provide homogeneous mixing in the digester. The digester has about 24-25 days retention capacity. Anaerobic digestion takes place in the digester, as a result of which BOD/COD is reduced and biogas is evolved. The digested effluent/ biomass mixture overflow into degassing pond where entrapped gases are released. Degassed effluent flows to Lamella Clarifier for separation of active biomass from outgoing treated effluent. The clarified effluent leaves the lamella clarifier for disposal or to secondary effluent treatment plant, while the separated biomass is pumped back continuously in to the Digester. The excess biomass is removed from the bottom of digester regularly to sludge beds for disposal or to form manure. Due to anaerobic digestion, biogas which is the mixture of 65 % of Methane gas & 35 % of CO_2 gas

produced in the digester accumulates in digester roof. The generated Biogas is transferred from the top of the Biogas Digester Tank to Biogas Holder Tank (Diameter- 8 m, Ht.- 6m, capacity- 300m^3) which is installed at a distance of 20 ft. from the Biogas Digester Tank. The gas holder acts as intermediate gas storage as well as a Pressure control vessel. The biogas is pumped to the boiler house by biogas blower. Excess gas, if any, is burnt in gas flare unit whenever gas is not being utilized in the boiler. There was about 65 lakh liter spent wash in the Biogas Digester.

The details of Biogas digester Tank :-

1) Tank Shape – Cylindrical.
2) Tank Capacity – 96,00,000 litre
3) Height – 18 mtr.
4) Diameter – 26 mtr.

One center Mounted Vertical Agitator is provided on the top of the Digester Tank, 3 lateral agitators are given at the bottom level of the tank. One manhole is provided on the side shell wall of the tank at bottom level and two manhole is provided on the top Dome of the tank.

8. **About Incidence -:** From the statement, my enquiry revealed that on the day of incident i.e. on dated 21/11/2020, manufacturing process of making sugar from sugarcane was being carried out. Distillery section also started from 02/11/2020. On 07/11/2020, spent wash feeding @ 2 m^3/hr was started to biodigester. Shri. Ravindra Kakde (Biogas Plant Operator) joined duty at 8.00 pm in night shift (8.00pm to 4.00pm) along with his colleague Shri. Suresh Chavan (Helper). Both were working in Biogas plant. Shri. Kakde was looking after Bio Gas Plant Operation.Shri. Kakde took the charge of night shift from second shift Biogas Plant Operator Shri. Ram Tormal. As usual, Spent wash produced in distillery was transferred to Bio Digester. At early stage, Methane generation was not started. Manhole on the roof of Digester Tank & vent kept open. Hence pressure was not developed inside the Digester. When methane gas generation starts, Then Vent and manhole of the digester kept closed. This methane gas is stored in Gas Holder. Shri. Kakde took the sample of spent wash in the digester for analysis. Then at around 11.45 pm, Shri. Kakde & Shri. Chavan were sitting outside the lab. Shri. Kakde heard sound from Digester which is 10 ft away from him. He went towards the Digester Tank. He noticed Spent Wash was released from crack developed at the Bottom of Tank. He turns around in fear. Within a fraction, welded bottom plate of the Digester Tank got sheared off and upper portion of tank fell on the ground. This resulted in heavy flow of spent wash (appro.65 lac litres) in all over surrounding area i.e bagasse yard, cane yard, composter yard garden etc. Due to heavy flow of spent wash, the above two workers & Shri.Jyotiram Dada Vagare working in nearby area were thrown away. Shri. Kakde hold branch of tree while Shri. Chavan & Shri. Vagare were bombarded on factory structure / machinery resulting in serious head injuries & fractures. Also due to pungent smell of spread spent wash, 8 workers working in nearby area became unconscious. All 10 workers were immediately shifted to the Siddheshwar Hospital, Solapur through factory vehicle. Two workers declared dead in the Civil Hospital Tal. Mohol, Solapur during treatment on 21/11/2020. After giving necessary first aid treatment, other seven workers were discharged from the Siddheshwar Hospital, Solapur on dated 24/11/2020 & last one worker Shri. Kakde was discharged from Siddheshwar Hospital, Solapur on dtd. 26/11/2020. As per Post Mortem reports, **Shri. Chavan & Shri. Vagare** died due to Head injuries.

In this incident, Biogas Digester tank & it's accessories like feed pump, motor, sludge recycle pump, lamella clarifier shell, Gas holder, gas flare equipment, safety device, biogas blower etc. Also walls & panel of laboratory got damaged due to heavy flow of spent wash. Factory management reported that in this incident, Machinery/equipment, structure loss of Appro. Rs.3,10,000,00 took place. These machineries/equipments are covered under insurance policy.

The details of workers died/injured are as follows-:

Sr. No.	Name of worker	Age about	Nature of work	Dt. of discharged
1.	Shri. Jyotiram Dada Vagare	45 yrs.	Pumpman	Expired on 21/11/2020 at Civil Hospital Tal. Mohol, Solapur.
2.	Shri. Suresh ankush Chavan	22 yrs.	Helper	Expired on 21/11/2020 at Civil Hospital Tal. Mohol, Solapur..
3.	Shri.Sajjan Balu Jogdand	20yrs.	Pumpman	Discharged on 24/11/2020 from Siddheshwar Hospital, Solapur.
4.	Shri. Mangesh Namdeo Pachpund	24 yrs.	Helper	Discharged on 24/11/2020 from Siddheshwar Hospital, Solapur.
5.	Shri. Mahesh Dilip Bodke	20 yrs.	Helper	Discharged on 24/11/2020 from Siddheshwar Hospital, Solapur.
6.	Shri. Kalyan Kisan Gurav	29yrs.	Watchman	Discharged on 24/11/2020 from Siddheshwar Hospital, Solapur.
7.	Shri. Parmeshwar Madhukar Thite	25 yrs.	Helper	Discharged on 24/11/2020 from Siddheshwar Hospital, Solapur.
8.	Shri.Raju Dattatraya Gaikwad	20 yrs.	Helper	Discharged on 24/11/2020 from Siddheshwar Hospital, Solapur.
9.	Shri. Ravindra Gajendra Kakde	29 yrs.	Biogas Operator	Discharged on 26/11/2020 from Siddheshwar Hospital Solapur.
10.	Shri. Sanjay Bajirao Panche	54 yrs.	Contractor	Discharged on 24/11/2020 from Siddheshwar Hospital, Solapur.

9. **Contravention of Section 7- A(2)(a) of Factories Act,1948-:**

As per provision of Sec. 7-A(2)(a) of factories Act, 1948 Every occupier shall ensure so far as reasonably practicable, the health, safety and welfare of all workers while they are at work in the factory. It shall include the provision of maintenance of plant and system of work in the factory that are safe & without risk to health.

From enquiry and statement of workers, it is revealed that, welded bottom plate of the Bio digester got sheared off and spent wash spill on the ground. This Bio digester was installed in year 2009 & is being used for production of biogas till date. Bio digester is of M.S.material having welded bottom plate. Spent wash stored in Biodigester is corrosive & acidic in nature. On the day of accident, worker working nearby noticed some leakage of spent wash from crack in welded joint of bottom plate of Bio digester. Within fraction of second, due to heavy pressure& weight of inside spent wash, the entire bottom plate abruptly got sheared off and bio digester fell on the floor resulting into spillage of spent wash in the premises. Due to heavy flow of spent wash, 3 workers working in that area were thrown away along spent wash. Therefore it appears that bottom plate of the Bio digester was not in sound condition. If welded bottom plate of the Bio digester was maintained in sound condition & was kept free from any corrosion, wear etc, spent wash would not have leaked from Bio digester and would have avoided the incident.

Thus Bio digester & it's welding were not properly maintained in safe working condition and was with risk to the safety of workers working there as such the provision of Section 7- A(2)(a) of Factories Act,1948 has been contravened by the occupier.

10. **Contravention of Rule 65(2)(b)(c) of Maharashtra Factories Rules,1963:**

As per provision of Rule 65(2)(b)(c) of Maharashtra Factories Rules,1963: Every pressure vessel used in any factory shall be (b) of sound construction& material and of adequate strength and shall be free from any defect; and (c) properly maintained in a safe working condition.

Bio digester which was operated at a pressure of 0.04 Kg/cm2 (gauge pressure) i. e. greater than atmospheric pressure. This is a pressure vessel within the meaning of Rule 65 (1)(d) of MFR 1963 being used in the manufacturing process of biogas..

From on spot enquiry and statement of workers, it is revealed that, welded bottom plate of the Bio digester got sheared off and spent wash spill on the ground. This Bio digester was installed in year 2009 & is being used for production of biogas till date. Bio digester is of M.S.material having welded bottom plate. On the day of accident, worker working nearby noticed some leakage of spent wash from welded joint of bottom plate of Bio digester. Within fraction of second, the entire bottom plate got sheared off and bio digester fell on the floor resulting into spillage of spent wash in the premises. Due to heavy flow of spent wash, 3 workers working in that area were thrown away along spent wash. Therefore it appears that bottom plate of the Bio digester was not in sound construction & its welding is of not having adequate strength. If welded bottom plate of the Bio digester was maintained in sound condition & was kept free from any corrosion, wear etc, spent wash would not have leaked from Bio digester and would have avoided the incident. Thus workers could have been saved.

Thus Bio digester & it's welding were not properly maintained in safe working condition and was with risk to the safety of workers working there as such the provision of Rule 65(2)(b)(c) of Maharashtra Factories Rules,1963 has been contravened by the occupier.

11. **Contravention of Rule 65(4)(a)(b)(c) of the M.F.R. 1963 -:**

Bio digester which was operated at a pressure of 0.04 Kg/cm2 (guage pressure) i. e. greater than atmospheric pressure. This is a pressure vessel within the meaning of Rule 65 (1) (d) of MFR 1963 being used in the manufacturing process of biogas.

The pressure plant in service shall be thoroughly examined by a competent person

a) Externally once in every period of six months
b) Internally ,once in every period of twelve months and
c) Hydraulic test once in a period of four years.

I asked factory manager to show the pressure vessel test report in Form 13 as per provision of Rule 65(4)(a)(b)(c) of the Maharashtra Factory Rule 1963. It is learned that last examination was carried out in October 2018. On the day of incident dtd. 21/11/2020 & also on the day of my visit to above said factory on dtd. 22/11/2020, I found that biodigester did not got thoroughly examined from competent person as stated above & hence the Occupier of the factory hence contravened the provisions of Rule 65(4)(a)(b)(c) of the Maharashtra Factory Rule 1963.

12. **Contravention of Rule 65(6) (ii) of Maharashtra Factories Rules, 1963:** During enquiry it is learnt that last crushing season of factory ended on 21/02/ 2018 and new season started from 21/10/2020. Plant was idle for this period i. e. 3 months & no manufacturing process was carried out during this period. Bio digester which was operated at a pressure of 0.04 Kg/cm2 (guage pressure) continues a pressure vessel as define under rule 65 (1)(d) of MFR 1963 being used in the manufacturing process.

As per provision of 65 (6) (ii) , "No pressure plant or pressure vessel which has been previously used or has remain isolated or idle for period exceeding 6 months or which has undergone repairs or alternations shall be used in a factory unless it is examined and tested by a competent person. Hence it is mandatory on the part of occupier to carry out testing of this pressure vessel which was idle for a period exceeding 6 months.

It is observed at the time of my visit that said pressure vessel i.e. Bio digester was not examined and tested by a competent person before taken into the use for current crushing season on datd 21/10/2020.

Hence by not getting examined and tested the above said Bio digester by a competent person before taken into the use which was idle for period exceeding 6 months, the provision of rule 65 (6) (ii) of Maharashtra Factories Rules, 1963 has been contravened.

13.PENALTY :- Thus the accused who is the Occupier of the said factory has contravened the said provisions of the said Act / Rules punishable under section 92 of the Factories Act 1948

14.PRAYER :- It is therefore prayed that the process may be issued against the Accused and he may be dealt in accordance with the provision of law.

Following is the list of prosecution witnesses.

1. Shri.P.V.Surse,
   Deputy Director, Industrial Safety & Health, Solapur.
2. Shri. Mauli Pawar (Distillery Chemist)
   Address :- At post. Ankoli,Tal.Mohol.Dist.Solapur
3. Shri. Ravindra Gajendra Kakde (Biogas Plant Operator)
   Address :- At Post. Angar Tal.Mohol Dist.Solapur
4. Shri. Kallapa Kisan Gurav (Watchman)
   Address :- At Post. Bitle Tal.Mohol Dist.Solapur

Place : Solapur
Date : 15.12.2020

(P.V.Surse)
Deputy Director
Industrial Safety & Health, Solapur.
& Inspector u/s 8 of Factories Act-1948.
The Complainant.

75259/2022/TECH-RD (Pune)

IN THE COURT OF CHIEF JUDICIAL MAGISTRATE SOLAPUR, AT SOLAPUR

STC No. /2020

State of Maharashtra
At the instance of
Shri. P. V. Surse (Age 42) ------- **The Complainant**
Deputy Director
Industrial Safety & Health, Solapur
& Inspector u/s 8 of the Factories Act-1948.

V/s

Shri. PRAKASH JANARADHAN CHAVARE (Age 52) --------- **Accused**
Occupier
Loknete Baburao Patil Agro Industries Ltd.,
Laxminagar, Angar, Tal.- Mohol, Dist.- Solapur.

OFFENCE UNDER THE PROVISIONS OF Section 7 A (2)(a) of The Factories Act, 1948, Rule 65(2)(b)(c) of The Maharashtra Factories Rules 1963, Rule 65(4)(a)(b)(c) of The Maharashtra Factories Rules 1963 & Rule 65(6) (ii) of The Maharashtra Factories Rules, 1963 PUNISHABLE U/S 92 OF THE FACTORIES ACT-1948.

Sr.	Name of the document	Remarks	Page No.
1	Form No. 1 for license on renewal for the year 2020 & Licence Copy	Online Photo copy	1 to 2
2	Detail visit remarks dated 21.11.2020 sent to the factory by hand	Original	3 to 11
3	Showcause Notice send to the Occupier by registered & its acknowledgement	Original	12
4	Statement of Shri. Ravindra G. Kakade, on dated 23.11.2020	Original	13
5	Statement of Shri. Mauli Pawar on dated 22.11.2020	Original	14
	Statement of Shri. Kalappa K. Gurav on dated 23.11.2020	Original	15
7	Accident report in Form No.24 A	Photo Copy	16
8	Photographs of the spot of accident	Photo Copy	17 to 20
9	Letter sent to The Collector , Office of District Collector, Solapur on dated 25.11.2020 by email	Original	21
10	Letter sent to The Director, I.S. & H. Maharashtra State, Mumbai on dated 4.12.2020 by email (Discharge papers of the 8 workers, received from factory)	Original	22 to 24
11	Letter sent to The Director, I.S. & H. Maharashtra State, Mumbai on dated 4.12.2020 by email (Letter regarding giving job to heirs of deceased workers, received from factory)	Original	25 to 27
12	Letter sent to the Commissior, Labour Court, Solapur on dated 4.12.2020 & by hand	Original	28 to 29
13	Panchanama By Police Department	Photo Copy	30 to 35
14	Post mortem report (two workers)	Photo Copy	36 to 51

15	Letter received from factory on dated 8.12.2020 (Regarding of compensation)	Original	52to 56
16	Letter received from factory on dated 8.12.2020 (Regarding of hospital & medical Bill)	Photo Copy	57
17	Corrigendum sent to the Factory on dated 11.12.2020	Original	59
18	Approval letter for prosecution proposal from Director. I.S.H. (Chief Inspector of Factories)Maharashtra State Mumbai On dated 15.12.2020	Photo Copy	60

Place : Solapur
Date : 16.12.2020

(P.V.Surse)
Deputy Director
Industrial Safety & Health, Solapur.
& Inspector u/s 8 of Factories Act-1948.
The Complainant.

Form 2 A

Annexure-XII

CRIME DETAILS FORM

गुन्ह्याचा तपशिलाचा नमुना/घटनास्थळ पंचनामा

1- P.S. मोहोळ Taluka मोहोळ Dist सोलापूर State महाराष्ट्र
पोलीस ठाणे तह. जिल्हा राज्य

2- FIR/Proceeding/G.D.No. 126 Year 2020 Date 22/11/2020
प्रथम खबर क्रमांक वर्षतारीख

Act and Sections सी.आर.पी.सी.174 प्रमाणे
अधिनियम व कलमे

3- The Place of Occurrence shown By:
घटनेचे ठिकाण दाखविणा-याचे-

Name राघवेंद्र अवताडे Father's/ Husband's Name मुरलीधर अवताडे
नाव वडिलांचे/पतीचे नाव

Address लक्ष्मीनगर अनगर, ता. मोहोळ (9552557438)
पत्ता

4- Type Of Crime (All Including M.O.Crime):
गुन्ह्याचा प्रकार(गुन्ह्याच्या सर्व पध्दतीसह)-

a)Major Head अकस्मात b)Classification of Major Head(Minor Head) निरंक
प्रधान शिर्ष प्रधान शिर्षाचे विभाग

c)Methods
पध्दती

1 बायोडायजेस्टर टाकीला चिर पडून लिक्वीड वाटेर
2 प्रेशन आणि दाबाने टाकी फुटली
3

d)Coneyances used निरंक
वापरलेली वाहने

e)Character assumed निरंक
केलेले वेषांतर व वतावणी

f)Language slang used मराठी
वापरलेली भाषा/बोली भाषा

g)Special Feature-1 निरंक
विशेष वैशिष्ट्य–१

h)Special Feature-2 निरंक
विशेष वैशिष्ट्य–२

i)Type of Place Occurance लोकनेते बाबुराव पाटील ॲग्रो इंडस्ट्रीज लि. लक्ष्मीनगर अनगर
घटनेच्या ठिकाणाचा प्रकार

j)Type of Property Involved(Major head of the Property to be filled):
अंतर्भुत मालमत्तेचा प्रकार

1 बायोडायजेस्टर टाकी 2 ॲमेला ब्लॅरीफायर
3 डीग्रॅसी फाईंग पॅड 4 गॅस होल्डर

(signature)

पोलीस निरीक्षक
मोहोळ पोलीस स्टेशन

Form 2-B

5- Particulars of the victims(attach separate sheet, if required):
बळींचा तपशील (आवश्यक असल्यास स्वतंत्र कागद जोडावा)

NO. अनु	Name नाव	Age वय	Sex लिंग	Na'lity राष्ट्रीयत्व	Religion धर्म	Wheher SC/ST जात/जमात	Occu. व्यवसाय	Address पत्ता	Type of injury दुखापत स्वरुप
①	ज्योतीराम उर्फ ज्योतीबा दादा वगरे वय 45 वर्षे रा. बिटले, ता. मोह.								
②	दुरन्त अंकुश चव्हाण, वय 22 वर्षे, रा. बिटले, ता. मोहोळ								

6- Motive of Crime
गुन्ह्याचा हेतु: कार्बोझायनेटर टाकीमधील पडून लिक्वीड बाहेर येवून अति दाबाने टाकी फुटली

7- Details of properties Stolen/Involved(Use appropriate prescribed froms and attach):
चोरीचा/अंतर्भुत मालमत्तेचा तपशील (योग्य नमुना वापरावा व सोबत जोडावा): निरंक

8- Description of the place of occurance:
घटनेच्या जागेचे वर्णन: आम्ही पंचास मोहोळ पोलीस स्टेशनचे पोसई संतोष इंगळे यांनी बोलाविलेवरुन आम्ही पंच लोकनेते बाबुराव पाटील ॲग्रो इंडस्ट्रीज लि. लक्ष्मीनगर अनगर ता. मोहोळ येथे हजर झालो, तेथे आम्हांस समक्ष कळविले की, मोहोळ पोलीस स्टेशन अ.म.नं. 198/2020 सी.आर.पी.सी. 174 प्रमाणे दाखल असलेल्या अकस्मात मयताचे साक्षीदार उभे करुन सांगुन जसे दाखवितात त्याप्रमाणे पाहिले व घडले परिस्थितीप्रमाणे पंचनामा लिहून द्या असे कळविलेवरुन आम्ही पंच पंचनामा लिहून देतो की,
समक्ष हजर असलेल्या इसमांस त्याचे नांव व पत्ता विचारता त्याने त्याचे नांव नवनाथ मुरलीधर बावळे, वय 52 वर्षे, धंदा- नोकरी (मेंटेनन्स विभाग प्रमुख) रा. लक्ष्मीनगर अनगर, ता. मोहोळ जि. सोलापूर असे सांगुन अकस्मात मयताबाबत घडल्याची हकीकत सांगितली की,

पुढे चालू.....

Form 2-C

Type of Injury

दिनांक २१/११/२०२० रोजी रात्री ११.४५ वा. चे सुमारास मौजे लोकनेते बाबुराव पाटील ॲग्रो इंडस्ट्रीज लिमीटेड अनगर, ता. मोहोळ जि. सोलापूर येथील बायोडायजेस्टर टाकीला, चिर पडून लिक्वीड वाटेर येवून अनि दाबाने टाकी फुटली व तीव्र प्रवाहामुळे तेथे काम करीत असलेले ① ज्योतीराम उर्फ ज्योतीबा दादा कारे, वय ४५ वर्षे ② सुरज मंजुरा चव्हाण, वय २२ वर्षे दोघे रा. विरसे, ता. मोहोळ जि. सोलापूर असे खाली पडल्याने त्यांचे डोक्याला मार लागल्याने उपचारासाठी सरकारी दवाखाना मोहोळ येथे दाखल केले असता दोघे ही उपचारापुर्वी मयत झाले असे सांगुन वस्तुनिष्ठ दाखविले ते पाहता –

सदरचे ठिकाण हे मौजे विरसे, ता. मोहोळ गावचे हद्दीतील शेत जमीन गट नंबर ३१० मध्ये असुन सदर ठिकाण हे आम्ही पंच, पोलीस साहेबांसह पाहिले असता सदरची बायोडायजेस्टर गॅस टाकी ही पुर्णपणे खाली पडून टाकी शेजारी असलेली दुसरी गॅस टाकी (होल्डर) फुटलेल्या टाकीच्या प्रेशरमुळे ६५ लाख लिटरच्या अतिप्रवाहामुळे सदर ठिकाणापासून ५० फुटापर्यंत जाऊन पडल्या स्थितीत दिसत आहे. सदर फुटलेल्या बायोडायजेस्टर टाकीची क्षमता ७० लिटर लाख लिटर असुन सदर टाकीच्या शेजारी लॅमेला क्लॅरीफायर, डीगॅसी फायरींग पाईप व स्लज सेटलींग टँक खाली पडून पुर्णपणे चेपलेल्या दिसत आहे, तसेच बायोगॅस लॅबोरेटरीमधील पॅनल बोर्ड, VFD, ऑनलाईन मॉनेटरींग सिस्टीमच्या साहित्याची पुर्णपणे वाहून जाऊन रेकॉर्ड नाश झाले आहे व लॉगबुक, ॲनालेसिस रिपोर्ट असे वाहून गेल्याने खालीलप्रमाणे नुकसान झाले असुन पर्यावरण व परिसरातील शेती पिकाचे नुकसान झाले नाही.

① १,८५,०००००/- बायोडायजेस्टर टाकीचे कि.अं.
② २५,०००००/- लॅमेला क्लॅरीफायरचे कि.अं.
③ १०,०००००/- गॅस होल्डरचे कि.अं.
④ ३५,०००००/- बायोडायजेस्टर टाकीतील द्रावणाचे कि.अं.
⑤ ०७,०००००/- डीगॅसी फायरींग पाईपचे कि.रु.
⑥ ०५,०००००/- स्लज टाकीचे कि.रु.
⑦ १०,०००००/- पॅनल मोटर कि.रु.
⑧ ३०,०००००/- इतर उपकरणे

३,०७,०००००/- एकुण रक्कम

येणेप्रमाणे नुकसान झाल्याचे दिसत असुन घटनास्थळावरुन काही एक जप्त करण्यात आले नाही, येणेप्रमाणे सदर ठिकाणची दिसती परिस्थिती आहे.

सदर ठिकाणची चतु:सिमा पाहता पुर्वेस नवीन कंपनीची जागा पश्चिमेस वॉश टू पावर प्लॉट दक्षिणेस कॉरोड रस्ता व उत्तरेस जुनी कंपनीची जागा आहे येणे प्रमाणे चतु:सिमा आहे.

सदरचा पंचनामा आम्ही पंच प्रथम पासुन अखेरपर्यंत हजर राहून पाहिले व दिसले परिस्थितीप्रमाणे बरोबर आहे. [signature] समक्ष

पोलीस निरीक्षक
मोहोळ पोलीस स्टेशन

75259/2022/TECH-RD (Pune)

9- Map/नकाशा:

सोबत जोडला आहे

10- Desription of physical evidence from the scene of crime for the property recovered/seized for the purpose of investigation: तपासकामी प्रत्यक्ष पुरावा म्हणून गुन्ह्याच्या जागेवरून मिळविलेल्या / जप्त केलेल्या मालमत्तेचे वर्णन:

निरंक

11- Date and Time of Panchnama: Time To
घटनास्थळ पंचनाम्याची दिनांक २८/11/2020 रोजी वेळ सकाळी 10.30 ते 11.30 पर्यंत

12- Name and Address of Panchas:
पंचाची नावे व पत्ता–

Signature of Panchas:
पंचांच्या सह्या

1. महादेव मच्छिंद्र उरवर, वय 35 वर्षे, धंदा-नोकरी
पत्ता- लक्ष्मीनगर अनगर, ता. मोहोळ

2. इरफान साहेब जमादार, वय 34 वर्षे धंदा-नोकरी
पत्ता- रा. लक्ष्मीनगर अनगर, ता. मोहोळ

Signature of Investigation Officer
अन्वेषण अधिकारी सही

Name
नाव– पो.स.ई.

Date
तारीख– पदनाम संतोष इंगळे

Rank

75259/2022/TECH-RD (Pune)

पोलीस निरीक्षक
मोहोळ पोलीस स्टेशन

75259/2022/TECH-RD (Pune)

पोलीस निरीक्षक
मोहोळ पोलीस स्टेशन

75259/2022/TECH-RD (Pune)

N.C.R.B (एन.सी.आर.बी)
I.I.F.-I (एकीकृत अन्वेषण फॉर्म - १)

FIRST INFORMATION REPORT
(Under Section 154 Cr.P.C.)
प्रथम खबर अहवाल
(कलम १५४ फौजदारी प्रक्रिया संहिता)

1. District (जिल्हा): सोलापुर ग्रामीण P.S.(ठाणे): मोहोळ Year (वर्ष): 2020
FIR No.(प्रथम खबर क्र.): 0897 Date and Time of FIR (प्र. ख. दिनांक आणि वेळ): 26/12/2020 15:50 वाजे

2.

S.No. (अ.क्र.)	Acts (अधिनियम)	Sections (कलम)
1	भारतीय दंड संहिता १८६०	304-A
2	भारतीय दंड संहिता १८६०	४२०

3. (a) Occurrence of offence (गुन्ह्याची घटना):
1. Day(दिवस): सोमवार
Time Period (कालावधी):
Date From (दिनांक पासून): 21/12/2020
Date To (दिनांक पर्यंत): 21/12/2020
Time From (वेळेपासून): 11:45 वाजे
Time To (वेळेपर्यंत): 22:00 वाजे

(b) Information received at P.S. (माहिती मिळालेले पोलीस ठाणे):
Date (दिनांक): 26/12/2020 Time (वेळ): 15:00 वाजे

(c) General Diary Reference (रोजनामचा संदर्भ
Entry No. (नोंद क्र.): 020 Date & Time (दिनांक आणि वेळ): 26/12/2020 15:45 वाजे

4. Type of Information (माहितीचा प्रकार): लेखी

5. Place of Occurrence (घटनास्थळ):
1.(a) Direction and distance from P.S.(पोलीस ठाण्यापासून दिशा व अंतर): उत्तर, 12 किमी
Beat No. (बिट क्र.):

(b) Address (पत्ता): लोकनेते बाबूराव पाटील ऑफ़ो

(c) In case, outside the limit of this Police Station, then (जर पोलीस ठाण्याच्या हद्दीबाहेर असल्यास):
Name of P.S.(पोलीस ठाण्याचे नाव):
District(State) (जिल्हा(राज्य)):

6. Complainant / Informant (तक्रारदार/माहिती देणारा):
(a) Name (नाव): पोलीस उप निरीक्षक संतोष बापू इ
(b) Father's/Husband's Name(वडील / पती चे नाव):
(c) Date/Year of Birth (जन्म तारीख/वर्ष): 1977 (d) Nationality (राष्ट्रीयत्व): भारत
(e) UID No. (यु.आय.डी. क्र.):
(f) Passport No.(पारपत्र क्र.): Date of Issue (दिल्याची तारीख):
Place of Issue (दिल्याचे ठिकाण):
(g) Id details (Ration Card,Voter ID Card,Passport,UID No.,Driving License,PAN)
ओळखपत्र विवरण (राशन कार्ड ,मतदाता कार्ड ,पासपोर्ट, यूआईडी सं., ड्राइविंग लाइसेंस, पैन कार्ड)

S.No.(अ.	Id Type (ओळखपत्राचा प्रकार)	Id Number (ओळखपत्राचा क्रमांक)
1		

(h) Address (पत्ता):

S.No.(अ. क्र.)	Address Type (पत्त्याचा प्रकार)	Address (पत्ता)
1	वर्तमान पता	नेमणुक मोहोळ पोलीस स्टेशन ,मोहोळ ,सोलापुर ग्रामीण,महाराष्ट्र,भारत
2	स्थायी पता	नेमणुक मोहोळ पोलीस स्टेशन ,मोहोळ ,सोलापुर ग्रामीण,महाराष्ट्र,भारत

(i) Occupation (व्यवसाय):

(j) Phone number (फोन नं.):

Mobile (मोबाइल नं.):

7. Details of known/suspected/unknown accused with full particulars (माहीत असलेल्या /संशयीत/अनोळखी आरोपीचा संपूर्ण पत्ता):

S.No. (अ.क्र.)	Name (नाव)	Alias (उर्फनाव)	Relative's Name (नातेवाईकाचे नाव)	Present Address (वर्तमान पत्ता)
1	रावसाहेब मुरलीधर अवताडे			1. रा लक्ष्मी नगर अनगर, ,मोहोळ ,सोलापुर ग्रामीण,महाराष्ट्र,भारत

8. Reasons for delay in reporting by the complainant/informant (तक्रारदार/माहिती देणा-याकडून तक्रार करण्यातील विलंबाची कारणे):

9. Particulars of properties of interest (संबंधीत मालमत्तेचा तपशील):

S.No. (अ.क्र.)	Property Category (मालमत्ता वर्ग)	Property Type (मालमत्ता प्रकार)	Description (वर्णन)	Value(In Rs/-) (मुल्य (रु. मध्ये))

10 Total value of property (In Rs/-)-(चोरीस गेलेल्या मालमत्तेचे एकूण मुल्य (रु. मध्ये)):

11 Inquest Report / U.D. case No., if any (इन्क्वेस्ट अहवाल/ अकस्मात मृत्यू प्रकरण क्र.,जर असल्यास)):

S.No. (अ. क्र.)	UIDB Number (यु.आय.डी. बी.क्र.)

12 First Information contents (प्रथम खबर हकीकत):

मोहोळ पोस्टे गुरनं.897/2020 भादवि क.304(अ),427 प्रमाणे फिर्यादी - पोलीस उप निरीक्षक संतोष बापू इंगळे, वय 43 वर्षे, धंदा-नोकरी, नेमणुक मोहोळ पोलीस स्टेशन आरोपी-रावसाहेब मुरलीधर अवताडे, वय 52 वर्षे, रा. लक्ष्मी नगर अनगर, ता. मोहोळ मुळ रा. पाळवणी, ता. माळशिरस, जि. सोलापूरयुफतापेठि- दिनांक 21/11/2020 रोजी रात्री 11.45 वा. पै सुधाकर लोकनेते बाबूराव पाटील ऑइल इंडस्ट्रीज लिमिटेड अनगर, ता. मोहोळ गुन्ह्यातील मयत-1) ज्योतीराम उर्फ ज्योतीबा दादा वगरे, वय 45 वर्षे, 2) सुरज अंकुश बचाव, वय 22 वर्षे, दोघे रा. बिटले, ता. मोहोळ, जि. सोलापूर गुन्ह्यातील मुद्देमाल-एकूण 3,07,00000/- रुपयेहकिकत-मी पोलीस उप निरीक्षक संतोष बापू इंगळे, वय 43 वर्षे, धंदा-नोकरी, नेमणुक मोहोळ पोलीस स्टेशन सोलापूर ग्रामीण सध्य हजर राहून चौकशी अहवाल सादर करतो की,मी वरील ठिकाणी नेमणुकीस असून गेल्या दिड वर्षापासून कामकाज करीत असून वरिष्ठांचे आदेशान्वये ड्युटी करतो. दिनांक 22/11/2020 रोजी आम्ही पोलीस स्टेशन येथे हजर राहून कार्यालयीन कामकाज करीत असताना आमचेकडे पोलीस निरीक्षक श्री. अशोकजी सायकर साहेब यांचे आदेशान्वये मोहोळ पोलीस स्टेशन अकस्मात मयत नंबर 126/2020 सी.आर.पी.सी. 174 प्रमाणे दिनांक 22/111/2020 रोजी दाखल करुन त्याचा पुढील तपास आमचेकडे दिला, त्यात खबरीची खबर माहता - आज दिनांक 22/11/2020 रोजी शासकीय रुग्णालय, मोहोळ येथे मौजे लोकनेते बाबूराव पाटील ऑइल इं.लि. अनगर, ता. मोहोळ, जि. सोलापूर येथील कार्यालयजेस्टर गस टाकी पडून त्यामधून मिथेन गस व ज्वलंश पदार्थ लिक्वीड बाहेर पडून दोन मुलगा जातीचे व्यक्ती नामे 1) ज्योतीराम उर्फ ज्योतीबा दादा वगरे, वय 45 वर्षे, 2) सुरज अंकुश बचाव, वय 22 वर्षे, दोघे रा. बिटले, ता. मोहोळ, जि. सोलापूर यांना उपचारासाठी दाखल असताना मिमाल प्रमुख रावसाहेब मुरलीधर अवताडे, रा. लक्ष्मीनगर अनगर, ता. मोहोळ यांनी उपचारासाठी दाखल केले असता सदर एम.एल.सी. नंबर 1773/2020 ज्योतीराम दादा वगरे व एम.एल.सी. नंबर 1774/2020 सुरज अंकुश बचाव यात दाखल करुन तपासले असता ते उपचारापुर्वीच मयत झाले आहे म्हणून वरील मजकुरची खबर आहे. सदर मयत दाखल झालेनंतर आम्ही सदर मयताचा दोन पंच नामे 1) महादेव कोंडीबा वगरे, वय 58 वर्षे, धंदा-मेंढी, रा. बिटले, ता. मोहोळ 2) कल्पीनाथ राजू बचाव, वय 25 वर्षे, धंदा-मेंढी, रा. बिटले, ता. मोहोळ यांचेसमक्ष इन्क्वेस्ट पंचनामा केला असून प्रेताचे पोस्ट मार्टम झालेनंतर प्रेत त्यांचे नातेवाईका यांचे ताब्यात देण्यात आलेले असून सदरचे पंचनामे मयताचे मुळ फागदपत्रात सामील केले आहेत. तसेच आम्ही सदर घटना घडले ठिकाणी जावून सदर घटना घडले ठिकाणचा घटनास्थळाचा घटनास्थळ पंचनामा दोन पंच नामे 1) महादेव मच्छिंद्र कदपर, वय 35 वर्षे, धंदा-नोकरी, रा. लक्ष्मी नगर अनगर, ता. मोहोळ 2) इरफान सादीक इनामदार, वय 29 वर्षे, धंदा-नोकरी, रा. लक्ष्मी नगर अनगर, ता. मोहोळ यांचेसमक्ष घटनास्थळ पंचनामा केला असून त्यात सदरचे ठिकाण हे मौजे बिटले, ता. मोहोळ गावचे हददीतील शेत जमीन गट नंबर 310 मध्ये असून सदर ठिकाण आम्ही पंचासमक्ष पाहिले असता सदरची कार्योडायजेस्टर गस टाकी ही पुर्णपणे खाली पडून टाकी शेजारी असलेली दुसरी गस टाकी (होल्डर) फुटलेल्या टाकीच्या द्रावणाच्या 65 लाख लिटरच्या अति प्रवाहामुळे सदर ठिकाणाहून 25

N.C.R.B (एन.सी.आर.बी)

I.I.F.-I (एकीकृत अन्वेषण फॉर्म - १)

पुढावस्ती जावून पडल्याचिथीत दिसत आहे. तसेच बायोगस, लॅबोरेटरीमधील पॅनल बोर्ड, टाक्या ऑनलाईन मॉनेटरींग सिस्टीममध्ये साहित्याची पुर्णपणे वाहून जावून रेकॉर्ड नाश झाले आहे व लॉगबुक, ऑनलाईनील रिपोर्ट असे वाहत जावून त्यात 1) बायोडायजेस्टर टाकीचे 2) तयेला फेलरीफायरचे 3) गस होल्डरचे 4) बायोडायजेस्टर टाकीतील द्रावणाचे 5) डीलरी फाईंग पाईप 6) स्लज टाकीचे 7) पनल मोटार 8) इतर यंत्रणे असे मिळून एकूण 3,07,00000/- रुपयाचे नुकसान झाल्याचे दिसत असून सविस्तर घटनास्थळ पंचनामा मयताचे मुत्र कागदपत्रात नमील केलेला आहे. तसेच सदरचे घटनेमधील अपघात नेमका कोणत्या कारणामुळे घडला यासाठी मा. फॅक्टरी इन्स्पेक्टर सो., सोलापूर यांचेद्वारे विचारणा करण्यात आलेला होता, त्यांचा अहवाल प्राप्त असून त्यामध्ये त्यांनी -1) बायोडायजेस्टर प्लांटची लोखंडी टाकीची बॉटम प्लेट कुमकुवत झाल्याने लिकेज होवून टाकी खाली पडली आहे.2) सदर बायोडायजेस्टर प्लांटची प्रत्येक 06 महिन्याला तांत्रिक तपासणी झाली नाही.3) प्रत्येक क्रशींग सिजन सुरु होण्याचा आगोदर सदर टाकीची तपासणी होवून दुरुस्ती व डागडुजी झाली नाही. त्यामुळे टाकी कमकुवत होवून लिकेज होवून खाली पडली आहे. 4) सदर डिस्टलरी प्लांट सांभाळण्याची व त्याची दुरुस्ती व डागडुजी व त्याची सर्वस्वी देखभाल करण्याची संपूर्ण जबाबदारी ही त्या प्लांटचे डिस्टलरी मॅनेजर यांची आहे. तसेच सदर दाखल मयतामधील मयत 1) ज्योतीराम उर्फ ज्योतीबा दादा पगरे, वय 45 वर्षे, 2) सुरज अंकुश पवार, वय 22 वर्षे, दोघे रा. सिटने, ता. मोहोळ, जि. सोलापूर यांचे पी.एम. नोटस प्राप्त झाले असून त्यामध्ये लोखंडी टाकी अंगावर पडल्याने गंभिर जखमी होवून दोघे ही मयत झाल्याचे नमूद आहे. तसेच सदर मयताचे झाले एकंदर तपासावरुन व मा. मा. फॅक्टरी इन्स्पेक्टर सो., सोलापूर यांचा अहवाल व साक्षीदार यांचे जबाबावरुन यांच्या अहवाल सादर की, दिनांक 21/11/2020 रोजी रात्री 11.45 वा. चे सुमारास लोकनेते बाबुराव पाटील ॲग्रो. इंडस्ट्रीज लिमिटेड अनगर, ता. मोहोळ येथील घटनेमध्ये प्लांटची वेळोवेळी तपासणी व दुरुस्ती झाली असती तर सदर घटना टाळणे शक्य झाले असते तसेच सदर डिस्टलरी प्लांट सांभाळण्याची व त्याची दुरुस्ती व डागडुजी व त्याची सर्वस्वी देखभाल करण्याची संपूर्ण जबाबदारी ही त्या प्लांटचे डिस्टलरी मॅनेजर रावसाहेब मुरलीधर अवताडे, वय 52 वर्षे, रा. लक्ष्मी नगर अनगर, ता. मोहोळ मुळ रा. फळवणी, ता. माळशिरस, जि. सोलापूर यांची असून त्यांचे हलगर्जीपणा व निष्काळजीपणा निदर्शनास येत असून डिस्टलरी मॅनेजर रावसाहेब मुरलीधर अवताडे यांचेवर भा.द.वि.कलम 304 (अ) प्रमाणे फिर्याद दाखल होण्यास विनंती आहे.म्हणुन वगैरे मजकुरची फिर्याद दिल्याने पोलीस ठाणे अंमलदार पोहेका/1022 यांनी दाखल करुन मा पोनि सो यांचे आदेशाने पुढील तपास पोसई इंगळे यांचेकडे दिला म्हणुन नोंद.

13. Action Since the above information reveals commission of offence(s) u/s as mentioned at (केलेली कारवाईः बाब क्र.२ मध्ये नमूद केलेल्या कलमान्वये वरील अहवालावरून अपराध घडल्याचे.)

(1) Registered the case and took up the investigation: (प्रकरण नोंदविले आणि तपासाचे काम हाती घेतले): SURYKANT DEVRAO KOKANE(I (Inspector)) / POBN65805 or (किंवा)

(2) Directed (Name of I.O.) (तपास अधिकाऱ्याचे नाव):

Rank (पद):

No.(क्र.): to take up the investigation (ला तपास करण्याचे अधिकार दिले) or (किंवा)

(3) Refused investigation due to (ज्या कारणामुळे तपास करण्यास नकार दिला):

or (ज्या कारणामुळे तपास करण्यास नकार दिला)

(4) Transferred to P.S.(गुन्हा दुसरीकडे पाठविला असल्यास त्या पोलीस ठाण्याचे नाव):

District (जिल्हा):

on point of jurisdiction (को क्षेत्राधिकार के कारण हस्तांतरित) .

F.I.R. read over to the complainant / informant,admitted to be correctly recorded and a copy given to the complainant / informant free of cost. (प्रथम खबर तक्रारदाराला/खबरीला वाचून दाखविली, बरोबर नोंदविली असल्याचे त्याने मान्य केले आणि तक्रारदाराला/खबरीला खबरीची प्रत मोफत दिली.)

R.O.A.C.(आर. ओ .ए सी.)

14. Signature/Thumb impression of the complainant / informant.(तक्रारदाराची/खबर देणाऱ्याची सही/अंगठा):

15. Date and time of dispatch to the court (न्यायालयात पाठवल्याची तारीख व वेळ):

Signature of Officer in charge, Police Station (ठाणे प्रभारी अधिकाऱ्याची)

Name (नाव): SURYKANT DEVRAO KOKANE

Rank(पद): I (Inspector)

No.(सं.): POBN65805

पोलीस निरीक्षक
मोहोळ पोलीस स्टेशन

37

T. F. P.—650,000—10-99 PAP—(D) 209
G. R., G. D., No. 733/03, dated 16-6-41 and
G. R., H. and L. G. D., No. 733/23, dated 11-12-41,
vide Surgeon General with the Govt. of Maharashtra, Bombay's
Letter No. ... dated ...

C.M.O.

PM NO - 116/2020

Memorandum of a Post-Mortem Examination held at RH Mohol Dispensary/ Hospital on the dead body of Jyoti Ram S/o Jyotiba Village/City R/o Bitale Pada Vagate Taluka Mohol, District Solapur, by Dr. Jadhav. T.T.

I. General Particulars :-

1. (a) By whom was the corpse sent ?	PSI Santosh Ingale Mohol police station.
(b) Name of place from which sent.	Loknete Baburao patil Agro-IlAnagar. Tal- Mohol Dist - Solapur.
(c) Distance of place from which sent.	
2. By whom was the corpse brought ?	P.N. 220 Musale Mohol police station.
3. By whom identified ?	As per police inquest
4. The date, hour and minute of its receipt.	22/11/2020 at 2:30 am
(a) The date, hour and minute of beginning post-mortem examination.	22/11/2020 at 12:15 pm
(b) The date, hour and minute of ending post-mortem examination.	22/11/2020 at 01:15 pm
5. Substance of accompanying Report from Police Officer or Magistrate, together with the date of death, if known. Supposed cause of death or reason, for examination	As per police inquest. to find out exact cause of Death.

औद्योगिक सुरक्षा व आरोग्य संचलनालय, सोलापूर
आवक क्र. 659
ऑनलाईन प्राप्त होय ☐ नाही ☐

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6. If not examined at Dispensary or Hospital—

(a) Name of place where examined. —

(b) Distance from Dispensary or Hospital. —

(c) Reason why the body was not sent to the Dispensary or Hospital. —

II. *External Examination*—

7. Sex, apparent age, race or caste. Description of clothes and of ornaments on the body. 45y Imale
As per police inquest.

8. *Condition of the clothes*—

Whether wet with water stained with blood or soiled with vomit or faecal matter. As per police inquest

9. Special marks on the skin such as scars, tattooing, etc., any malformations, peculiarities or other marks of identification. State of the teeth. —

In newly-born infants, the length and (if possible), the weight of the body to be recorded together with the state of the hair, nails and umbilical cord, its length, whether placenta is attached or not, if present, its size and condition. NA

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(39)

10. *Condition of Body*—Whether well-nourished, thin or emaciated, warm or cold.

Cold
well nourished

11. *Rigor Mortis*—Well-marked, slight or absent, whether present in the whole body or part only.

well marked on all over body

12. Extent and signs of decomposition, presence post-mortem lividity of buttocks, loins, back and thighs or any other part. Whether bullae present and the nature of their contained fluid. Condition of the cuticle.

PM lividity present on buttocks, loins, back and thighs.

13. *Features*—Whether natural or swollen, state of eyes, position of tongue; nature of fluid (if any) oozing from mouth, nostrils or ears.

Features- Natural
Eyes- closed
mouth- closed
Tongue- Inside mouth.

14. *Condition of skin*—Marks of blood, etc. in suspected throwing the presence or absence; if *entry wounds* to be noted.

—

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(40)

15. Injuries to external genitals. Indication of purging.

NO e/o injury to external genitals.

16. Position of body—Especially of arms and of fingers in suspected drowning the presence or absence of sand or earth within the nails or on the skin of hands and feet.

- Body- supine position.
- Upper limbs- abducted at shoulder joint and Flexed at elbow joint Hands are clenched
lower limbs - Externally rotated at Hip joint straight

17. Surface wounds and injuries— Their nature, position, dimensions (measured) and directions to be accurately stated—their probable age and causes to be noted.

If bruises be present what is the condition of the subcutaneous tissues?

(N.B.—When injuries are numerous and cannot be mentioned within the space available they should be mentioned on a separate paper which should be signed).

1) CLW of 3x2x0.5 cm approx on left parietal region.

2) Dislocation of both the hip joint

18. Other injuries discovered by external examination or palpation as fractures etc.

—

(a) Can you say definitely that the injuries shown against serial Nos. 17 and 18 are ante-mortem injuries?

yes.

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Internal Examination—

19. Head—

(i) Injuries under the scalp, their nature.	Bleeding seen
(ii) *Skull*—Vault and base-describe fractures, their sites, dimensions, directions etc.	Fissured : fracture in the left Parietal bones.
(iii) *Brain*—The appearance of its coverings, size, weight and general condition of the organ itself and any abnormality found in its examination to be carefully noted (Weight M. 3 gram F. 2.75 grams).	Intracranial Haemorrhage Brain matter congested, odematous

20. Thorax—

(a) Walls, ribs, cartilages ...	intact, No injury
(b) Pleura	intact, No injury
(c) Larynx, Trachea and Bronchi	intact, No injury
(d) Right Lung	} intact, No injury, congested
(e) Left Lung	
(f) Pericardium	intact, No injury.
(g) Heart with weight	intact, No injury
(h) Large vessels	intact, No injury.
(i) Additional remarks	—

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(42)

21. Abdomen—

Walls	intact, No injury.
Peritoneum	
Cavity	
Buccal Cavity, teeth, tongue and pharynx.	
Oesophagus	
Stomach and its contents	intact, No peculiar smell perceived
Small intestine and its contents	intact, partly loaded with gases and faece
Large intestine and its contents	
Liver (with weight) and gall bladder.	intact, No injury, congested
Pancreas and Suprarenals	
Spleen with weight	
Kidneys with weight	intact, No injury
Bladder	intact, No injury, empty.
Organs of generation	–
Additional remarks with where possible, Medical Officer's deduction from the state of the contents of the stomach as to time of death and last meal.	–
State which viscera (if any) have been retained for chemical examination and also quote the numbers on the bottles containing the same.	Not preserved

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(42)

*Spine and Spinal cord

(43)

intact, not open.

Opinion as to the cause probable cause of death.

Head injury with intracranial Haemorrhage with dislocation of both the hip joints.

Dated 22/11/2020 [illegible]

(Signature)
Dr Tofeel J.T.

*The Spinal Cord need not be examined unless there are any indications of disease [illegible] poisoning or injury.

Note.—The report must be written and signed immediately after the examination. [illegible]
[illegible] Civil Surgeon of [illegible]
[illegible]

75259/2022/TECH-RD (Pune)

8

pm No. 116/2020 22/11/2020

1. Dispensary / Place Civil Hospital RH mohol 199

Forwarded to the Police Sub-Inspector mohol Police station for information with reference to his No. of 22/11/2020

2. Viscera has preserved. It may please be stated immediately whether examination by the Chemical Analyst is necessary or it is to be destroyed.

Not preserved

For Civil Surgeon or M. M.

Copy forwarded with compliments to the Civil Surgeon, for information.

M. M. S. Officer.

Seen and examined by the Civil Surgeon, 199

Remarks of the Civil Surgeon, (if any)

Civil Surgeon.

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(45)

Y.C.P.—6,50,000—10-99 PA4*—(U) 299
G. R., G. D., No. 733/33, dated 16-6-41 and
G. R., H and L. G. D., No. 733/33, dated 11-12-47,
vide Surgeon General with the Govt. of Maharashtra, Bombay's
Letter No. DOM/1402/1993/71, dated 4-7-62-1

C.M. 67 e.

PM NO-117/2020

Memorandum of a Post-Mortem Examination held at RH Mohol Dispensary/ Hospital on the dead body of Suraj Ankush Chavan Village/City Bitale Taluka Mohol, District Solapur, by Dr. Jadhav T.T.

I. General Particulars.-

1. (a) By whom was the corpse sent? — PSI Santhosh Ingale, Mohol police station.

(b) Name of place from which sent. — Loknete Babu Rao patil AgroIt Anagar. Tal- Mohol Dist- Solapur

(c) Distance of place from which sent.

2. By whom was the corpse brought? — P.N. 220 Musale, Mohol police station.

3. By whom identified? — As per police inquest

4. The date, hour and minute of its receipt. — 22/11/2020 at 2:30 am

(a) The date, hour and minute of beginning post-mortem examination. — 22/11/2020 at 1:15 pm

(b) The date, hour and minute of ending post-mortem examination. — 22/11/2020 at 2:15 pm.

औद्योगिक सुरक्षा व आरोग्य संचालनालय, सोलापूर
आवक क्र. 659

5. Substance of accompanying Report from Police Officer or Magistrate, together with the date of death, if known. Supposed cause of death or reason for examination. — As per police inquest, to find out exact cause of death.

75259/2022/TECH-RD (Pune)

6. If not examined at Dispensary or Hospital—

(a) Name of place where examined.

—

(b) Distance from Dispensary or Hospital.

—

(c) Reasons why the body was not sent to the Dispensary or Hospital.

—

II. External Examination—

7. Sex, apparent age, race or caste. Description of clothes and of ornaments on the body.

Male / 22yrs.
As per police inquest

8. Condition of the clothes.

Whether wet with water stained with blood or soiled with vomit or faecal matter.

As per police inquest.

9. Special marks on the skin such as scars, tattooing, etc., any malformations, peculiarities or other marks of identification. State of the teeth.

—

In newly-born infants, the length and (if possible), the weight of the body to be recorded together with the state of the hair, nails and umbilical cord, its length, whether placenta is attached or not, if present, its size and condition.

NA

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(47)

ndition of body—Whether ell-nourished, thin or emacia-ed, warm or cold.

3

Cold
well nourished

11. *Rigor Mortis*—Well-marked, slight or absent, whether present in the whole body or part only.

well marked on all over body

12. Extent, and signs of decomposition, presence post-mortem lividity of buttocks, loins, back and thighs or any other part. Whether bullae present and the nature of their contained fluid. Condition of the cuticle.

PM lividity present on buttocks, loins, back and thighs.

13. *Features*—Whether natural or swollen, state of eyes, position of tongue; nature of fluid (if any) oozing from mouth, nostrils or ears.

Features - Natural
Eyes - closed
mouth - closed
Tongue - inside mouth
Nasal bleeding present

14. *Condition of skin*—Marks of blood, etc. in suspected drowning the presence or absence of *cutes anserina* to be noted.

—

75259/2022/TECH-RD (Pune)

(48)

15. Injuries to external genitals. Indication of purging.

No clo any injury to external genitalia

16. *Position of limbs*—Especially of arms and of fingers in suspected drowning the presence or absence of sand or earth within the nails or on the skin of hands and feet.

- Body- supine position
- Upper limbs- straight
- lower limbs - Externally rotated at hip joint straight

17. *Surface wounds and injuries*—Their nature, position, dimensions (measured) and directions to be accurately stated—their probable age and causes to be noted.

If bruises be present what is the condition of the subcutaneous tissues ?

1) CLW 4X2X1 cm appror on left Parietal region on Head

2) CLW 6X2X1 cm approx above the left eat.

3) Dislocation of both the hip joints.

[*N.B.*—When injuries are numerous and cannot be mentioned within the space available they should be mentioned on a separate paper which should be signed].

18. Other injuries discovered by external examination or palpation as fractures etc.

-

(a) Can you say definitely that the injuries shown against serial Nos. 17 and 18 are antemortem injuries ?

yes.

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75259/2022/TECH-RD (Pune)

(49)

ternal Examination—

5

Head—

(i) Injuries under the scalp, their nature. — Bleeding seen

(ii) Skull—Vault and base-describe fractures, their sites, dimensions, directions etc. — Fissured fracture at left parietal region

(iii) Brain—The appearance of its coverings, size, weight and general condition of the organ itself and any abnormality found in its examination to be carefully noted (Weight M. 3 gram F. 2.75 grams). — Intracranial Haemorrhage
Brain matter congested, odematow

20. Thorax—

(a) Walls, ribs, cartilages —
(b) Pleura —
(c) Larynx, Trachea and Bronchi
} Intact, no injury

(d) Right Lung —
(e) Left Lung —
} Intact, no injury, congested

(f) Pericardium —
(g) Heart with weight —
(h) Large vessels —
} Intact, no injury

(i) Additional remarks —

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(50)

6

21. Abdomen—

Walls	} intact, No injury
Peritoneum	
Cavity	
Buccal Cavity, teeth, tongue and pharynx.	Tongue - Inside mouth
Oesophagus	Intact, No Injury
Stomach and its contents	Intact. No peculiar smell perceived
Small intestine and its contents	} Intact. Partly loaded with gases and fat
Large intestine and its contents	
Liver (with weight) and gall bladder.	} intact. No Injury. congested
Pancreas and Suprarenals	
Spleen with weight	
Kidneys with weight	intact, No injury
Bladder	Intact. No injury, empty
Organs of generation	—

Additional remarks with where possible, Medical Officer's deduction from the state of the contents of the stomach as to time of death and last meal. —

State which viscera (if any) have been retained for chemical examination and also quote the numbers on the bottles containing the same.

Not preserved

Scanned by CamScanner

S. C. P.—6,5000—10-99 PAP—(H) 259
G. R., G. D., No. 233/33, dated 16-6-41 and
G. R., H. and L. G. D., No. 233/33, dated 11-11-47

(57)

7

*Spine and Spinal cord

intact. not open.

Opinion as to the cause probable cause of death.

Head injury with intracranial Haemorrhage with dislocation of both the hip joints

Dated 22/11/2020

(Signature)

Dr. Jadhav

*The Spinal Cord need not be examined unless there are any indications of disease, Suspicious poisoning or injury.

Note—The report must be written and signed immediately after the examination. Medical Officers will at once despatch a duplicate copy to the Civil Surgeon of their district for record in his Office.

Great care should be taken not to cut the viscera before they have been inspected in situ.

PM No.1/7/2020 22/11/2020 199

1. Dispensary / Place Civil Hospital RH mohol 199

Forwarded to the Police Sub-Inspector mohol police station for information with reference to his No. of 22/11/2020 ~~199~~

2. Viscera has preserved. It may please be stated immediately whether examination by the Chemical Analyser is necessary or it is to be destroyed.

For Civil Surgeon or M. M.

Copy forwarded with compliments to the Civil Surgeon, for information.

M. M. S. Officer.

Seen and examined by the Civil Surgeon, on 199

Remarks of the Civil Surgeon, (if any)

Civil Surgeon.

Letter from Marathi to English

DISTRICT COLLECTOR AND CHAIRMAN, DISTRICT DISASTER MANAGEMENT AUTHORITY, SOLAPUR

Premises of District Collector Office,
Siddheshwar Peth,
Solapur – 413 001

Phone No.(0217) 2731020 email id:collectorsolapur@gmail.com

Out Ward No.2020/Masha/Karya-4/Naa/GNN/PK98/RR-1964

To,
M/s Loknete Baburao Patil Agro Industries Ltd.,
Laxminagar, Angar, Tal-Mohol,
Dist-Solapur

Sub : Accident occurred due to bursting of Biogas Tank of M/s Loknete Baburao Patil Agro Industries Ltd.,Laxminagar, Angar reg. -

Ref :
1) Tahsildar, Mohol's letter no. Jababi / Kavi /2946 / 2020, Dated 10-12-2020;
2) News item published in The Indian Express on Monday, the 23/11/2020;
3) Hon. National Green Tribunal, Principal Bench, New Delhi's video conference hearing on 18-12-2020;
4) Order issued by Hon. National Green Tribunal, Principal Bench, New Delhi on 18-12-2020;

With reference to above referred subject, this is to inform that this office is in receipt of the Order as issued by the Hon. National Green Tribunal, Principal Bench, New Delhi on 18-12-2020. As per the Point No.15 of the Order, it is mentioned that –Video Order Dated 18-06-2020 in O.A.No.22/2020(W.Z.) Aryavart Foundation through its President V.Yashyashvi

Rasayan Pvt.Ltd., and Anr. & we determine the interim compensation at Rupees 50/- lakh in the case of death, Rupees 5/- lakh in the case of serious injury and Rupees 2.5 lakhs to any other injured as follows:-

'We assess interim compensation for death to be 15/- lakhs each (taking into account multiplier of around 16 and loss of earning of about One lac a year, taking the minimum wage apart from conventional sums). For grievous injuries Rs.5/- lakh per person, for other injuries of persons hospitalized Rs. 2.5 lakh er person and for displacement at Rs. 25,000 per person.'

As per point no.16, 'Accordingly, the said scale needs to be applied to the present case. Final compensation may be suggested by Committee including for restoration of environment. The industrial unit may deposit appropriate amount of cover interim compensation (deficit amount remaining to be paid) with the District Magistrate within one month, failing which the District Magistrate may recover the same by coercive measures, as per law. The District Magistrate may ensure disbursement of the amount of interim compensation to the victims, excluding the payment already made. We request the District Legal Authority, Solapur to provide assistance to the victims in accessing legal remedies. This Order will be without prejudice to liability under the Criminal Law.

As per the point nos 15 and 16 of the Order as issued by the Hon. National Green Tribunal, Principal Bench, New Delhi on 18-12-2020, the heirs of the deceased and injured persons should be granted compensation. Hence, the list of heirs of deceased and injured persons with cheques for payment should be submitted to District Collector Office, Solapur within one month of date 18-12-2020 i.e. 17-01-2021. If the compensation amount is not deposited in time, as per the Order given by the Hon. National Green Tribunal, Principal Bench, New Delhi on 18-

12-2020, further stringent action will be initiated against you, which please be noted.

Enclosed the copy of the Order as issued by Hon. National Green Tribunal, Principal Bench, New Delhi on 18-12-2020.

Sd/-
(Milind Shabhankar, IAS)
District Collector, Solapur

Encl –

Order as issued by Hon. National Green Tribunal, Principal Bench, New Delhi on 18-12-2020.

Copy submitted for information to :-

1) Hon. National Green Tribunal, Principal Bench, New Delhi;
2) Hon. Divisional Commissioner, Pune Division, Pune;Ta

Copy for information and necessary action to :-
Tahsildar, Mohol

- He is directed to get serve the copy of concern industry today only and send the receipt of the same immediately.

जिल्हाधिकारी तथा अध्यक्ष जिल्हा आपत्ती व्यवस्थापन प्राधिकरण सोलापूर

जिल्हाधिकारी कार्यालय आवार, सिध्देश्वर पेठ, सोलापूर - ४१३००१

महसूल शाखा - जिल्हा नियंत्रण कक्ष

GOVERNMENT OF MAHARASHTRA

दूरध्वनी क्र. : (0217) - 2731020

फॅक्स क्र. : (0217) - 2621120

Email ID : collectorsolapur@gmail.com

Email ID : rdcsolapur@gmail.com

Email ID : ddmo.rfsol-mh@gov.in

जा.क्र. २०२०/मशा/कार्या-४/नैआ/जिनिक/प्र.क्र.९८/आरआर- 1964 दिनांक:- 31 /१२/२०२०

पत्र

प्रति,

व्यवस्थापक
लोकनेते बाबूराव पाटील ॲग्रो इंडस्ट्रिज लि.
लक्ष्मीनगर अनगर ता.मोहोळ जि.सोलापूर

विषय- **लोकनेते बाबूराव पाटील ॲग्रो इंडस्ट्रिज लि.लक्ष्मीनगर अनगर या कारखान्याची बायोगॅसची टाकी फुटल्याने झालेल्या अपघाताबाबत.**

संदर्भ- १. तहसिलदार मोहोळ यांचेकडील पत्र क्रमांक जवाबी/का.वि/२९४६/२०२० दिनांक १०/१२/२०२०

२. the Indian Express या वृत्तपत्रामध्ये सोमवार, दिनांक २३/११/२०२० रोजी प्रसिध्द झालेली बातमी.

३. मा.राष्ट्रीय हरित लवाद मुख्य शाखा नवी दिल्ली यांनी दिनांक १८/१२/२०२० रोजी व्हिडिओ कॉन्फरन्सव्दारे झालेली सुनावणी.

४. मा.राष्ट्रीय हरित लवाद मुख्य शाखा नवी दिल्ली यांचेकडील दिनांक १८/१२/२०२० रोजीचा आदेश

FM

उपरोक्त विषयास अनुसरून कळविणेत येते की, मा.राष्ट्रीय हरित लवाद मुख्य शाखा नवी दिल्ली यांचेकडील दिनांक १८/१२/२०२० रोजीचा आदेश या कार्यालयास प्राप्त झाला आहे. सदर आदेशातील मुददा क्रमांक १५ मध्ये त्यांनी असे नमूद केले आहे की, Vide order dated 08.06.2020 in O.A. No. 22/2020 (WZ), Aryavart Foundation through its President v. Yashyashvi Rasayan Pvt. Ltd. and Anr., we determined the interim compensation at Rs. 15 lakhs in the case of death, Rs. 5 lakhs in the case of serious injury and Rs. 2.5 lakhs to any other injured as follows:

"6..we assess interim compensation for death to be 15 lakhs each (taking into account multiplier of around 16 and loss of earning of about one lac a year, taking the minimum wage, apart from conventional sums), for grievous injury Rs. 5 lakh per person, for other injuries of persons hospitalized Rs. 2.5 lakh per person and for displacement at Rs. 25000/- per person."

तसेच मुददा क्रमांक-१६ मध्ये Accordingly, the said scale needs to be applied to the present case. Final compensation may be suggested by the Committee, including for restoration of environment. The industrial unit may deposit appropriate amount to cover interim compensation (deficit amount remaining to be paid) with the District Magistrate within one month, failing which, the District Magistrate may recover the same by coercive measures, as per law. The District Magistrate may ensure disbursement of the amount of interim compensation to the victims, excluding the payment already made. We request the District

Legal Authority, Solapur to provide assistance to the victims in accessing legal remedies. This order will be without prejudice to liability under the Criminal Law. असे नमूद केले आहे.

मा.राष्ट्रीय हरित लवाद मुख्य शाखा नवी दिल्ली यांचेकडील दिनांक १८/१२/२०२० रोजीचे आदेशातील मुद्दा क्रमांक १५ व १६ मध्ये नमूद केलेप्रमाणे मयत व्यक्तींच्या वारसदारांना व जखमी व्यक्तींना नुकसान भरपाई देणेकामी मयत व्यक्तीच्या वारसदारांची व जखमी व्यक्तींची यादी व त्यांचे धनादेश जिल्हाधिकारी कार्यालय सोलापूर यांचेकडे दिनांक १८/१२/२०२० पासून १ महिन्याच्या आत म्हणजेच दि.१७/१/२०२१ पर्यंत जमा करणेत यावी. सदरची रक्कम मुदतीत जमा न केल्यास आपणाविरूध्द मा.राष्ट्रीय हरित लवाद मुख्य शाखा नवी दिल्ली याचे आदेशानुसार योग्य ती कठोर कारवाई प्रस्तावित करणेत येईल याची नोंद घ्यावी.

सोबत- मा.राष्ट्रीय हरित लवाद मुख्य शाखा नवी दिल्ली यांचेकडील दिनांक १८/१२/२०२० रोजीच्या आदेशाची प्रत जोडली आहे.

(मिलिंद शंभरकर)
जिल्हाधिकारी सोलापूर

प्रत- मा.राष्ट्रीय हरित लवाद मुख्य शाखा नवी दिल्ली यांना माहितीस्तव सविनय सादर.
प्रत-मा.विभागीय आयुक्त पुणे विभाग पुणे यांना माहितीस्तव सविनय सादर.
प्रत-तहसिलदार मोहोळ यांना माहितीसाठी व पुढील कार्यवाहीसाठी रवाना.

२/- सोबतचे पत्र संबंधितास आजच बजावणी करून त्याबाबतची पोहोच तात्काळ या कार्यालयात सादर करावी.

INSPECTION REPORT (CIS-REPORT-0000032456)

1. NAME OF THE UNIT	LOKNETE BABURAO PATIL SAH. SAKHAR KARKHANA MARYADIT LAXMINAGAR, ANGAR, MOHOL SOLAPUR
2. ADDRESS OF THE UNIT	LAXMINAGAR, ANGAR, MOHOL SOLAPUR
3. PINCODE	413213
4. INDUSTRY TYPE	Hazardous factories under 2(c)(b)
4. Visit Date	August 23, 2019
5. Report Submitted On	August 24, 2019
6. Mobile Number	9552557511
6b. Email Address	loknetesugar@gmail.com
7. Observation on Manufacturing Process,Raw materials,Finished Products	Factory found not working due to off season.
8. Name of Occupier/Manager,Mob No,E-mail	Shri. A.G.Pawar (H.R.Head)
9. License No. and Renewal Position	Licence No. 14157 is renewed up to the year 2018 for 500 numbers of workers and more than 2000 HP. Licence renewal application is send for year 2019 for 500 workers and more than 2000 HP.
10. Status of Plan Approval, ndition of approved Plans certificate of stability	Revised plans of the factory is approved by Jt. Director, I.S. &H, pune vide letter No. 1535/2016 on dated 26-05-2016 Stability certificate is obtained Dtd.- 12-11-2017 Any changes, expansion in plan, i.e in distillery section shall be got approved by Jt. Director, I.S&H, Pune.
11. Status of Annual Return, Women sexual Harassment Committee	Found Provided. Annual Return in Form -27 - submitted for year 2018.
12. Inspection Of Records(Muster/Leave/Accident/Health Register)	Muster/Leave/Accident/ Health Register- provided at the time of visit. All workers including contract workers shall be medically examined from the certifying surgeon and also maintain health register in Form -7, as per rule 18A of the M.F. Rules 1963. Also workers employed in a hazardous process shall be medically examined once in a period of 6 months as per rule 73-V the MFR, 1963.
13. Status of various Notices displayed under Factories Act 1948:	Form 16, Form No.-26 found displayed in Factory.
14. Status of Machine Guarding, Flameproof fittings, Electrical Fittings, Emergency Exits, ventilation, Illumination, Noise Level and Housekeeping etc. :	Found Provided.Machine Guarding, Electrical Fittings, Emergency Exits, ventilation, Illumination - found provided. Noise Level and Housekeeping- maintained. Flameproof fittings - provided where flammable liquids were handled, stored. Non sparking tools shall be used where where flammable liquids were handled, stored. Emergency exit shall be kept obstruction free.
15. Status of Fire-Fighting rrangement:	Found Provided.Provision of rule 70 of M.F.R. 1963 regarding fire protection shall be complied with. Adequate fire fighting arrangements shall be maintained as per rule 71-B(7)(i) of the MFR, 1963. Factory shall detail a trained officer who shall be responsible for the proper maintenance and upkeep of all fire fighting equipments. Fire extinguisher (72 Nos.), Buckets with water (10 Nos.), water tank - 2 no. one fire tender found provided. Fire protection as per rule 70 of the MFR, 1963 shall be complied.
16. Status of Personnel protective Equipments:	Found provided. Worker shall be provided and insisted to use personal protective equipments like helmet, face shield, nose mask, safety goggles, safety apron, safety shoes, ear plug, hand gloves etc., while working in the factory.
17. Status of Testing of Pressure vessels and lifting machines:	pressure vessel like juice heater, evaporator were previously tested on 12/10/2018. Hydraulically examined on 12/10/2018. Lifting Tackle tested on 01/02/2018.
18. Status of On-site Emergency Plan,Risk analysis, safety audit,HAZOP Study Reports etc.:	Safety Audit done on 27/04/2018. It is instructed to carry out HAZOP Study. On site emergency plan shall be updated and all concern persons shall be made aware about their role in case of emergency.
19. Status of First aid Box,Ambulance Room/OHC, Ambulance-Van, Canteen, Lunch Room, Rest Room and creche:	First- Aid Box ,Lunch Room, Ambulance Room, Ambulance -Van, Canteen, - Found Provided. Creche- Not Applicable.Canteen shall be in confirmitive with provision of canteen.
20. Status of appointment of Welfare officer,Safety Officer, Medical Officer.:	Safety officer shall be appointed.Welfare officer - Not applicable

21. Any Other Observations:	Goggles, Aprons shall be provided while handling corrosive substance. Rubber mat shall be provided in front of electric panel. Before starting the plant hydraulic testing shall be carried out.18. Safe operating procedure shall be developed and make known to all worker. Work permit system for hot work, confined space work, working at height etc shall be adopted. Overtime wages, if any, shall be paid at the rate of twice that of ordinary wages including all allowances as per sec. 59 of Factories Act, 1948. All workers including eligible contractor worker shall be allowed to avail leaves with wages and record thereof shall be maintained in Form 20. Effective screen or suitable goggles shall be provided for the protection of person employed in or in the vicinity of pouring or skimming of molten metals, welding or cutting of metals by means of an electric, oxy- acetylene or similar process. 30. Worker shall be provided and insisted to use personal protective equipments like helmet, face shield, nose mask, safety goggles, safety apron, safety shoes, ear plug, hand gloves etc., while working in the factory. Occupier of factory shall prepare a written statement of his policy in respect health and safety of workers as per rule 73-L of MFR1963.All operations/works in the plant operation shall be carried out as per SOP prescribed by the manufacturer and supplier of chemicals and equipments to ensure safety of all workers at all time. Dust shall be cleaned regularly removed in sugar packing area to avoid dust explosion.Mock drill shall be carried & its report shall be submitted to office. As R.S. is used, provisions of schedule XXIII appended to rule 114 of M.F.R.1963(regarding highly flammable liquids) shall be complied w.r.t. prevention of ignition. All reasonably practicable measures shall be adopted to eliminate chances of static electricity. Earth pit resistance shall be monitored regularly.
21. Any Contraventions:	

22. Non-Compliant Visit:	No

Inspection Report submitted by P V Surase (DISH-Solapur)

This is a system generated document hence signature is not required.

Inspection Remarks shall be pasted in Inspection book. (Form 31)

Inspection Report has been sent on Email: **loknetesugar@gmail.com** as on date **August 24, 2019**

ECOBOARD INDUSTRIES LTD.

Manufacturers of Bagasse Boards

ECOBOARD

In Collaboration with Nature

IS: 12823 IS: 3087

Date: 13/02/2021

To

The Chief Executive Officer

Lokanete Baburao Patil Agro Industries Ltd.

Augar Solapur

Sub: Design Aspect on Basis of Parameter of Digester.

Dear Sir

With reference to the above subjects, we have design the digester (Bio Gas Plant) on following basis.

1-Spentwash flow 400M^3/day with inlet COD 130000 PPM BOD 65000 PPM PH 4.20 and Temp.-40^{0}C

2-We have arranged COD degradation 65 to 70 %.BOD degradation 80 to 85 % respectively. PH should be Alkaline final out let of effluent.

3- Digester volume to be calculated on the basis of COD Kg per day basis and 5Kg/M^3/day basis.

4-Digester Erection and fabrication on the basis of IS-803 Guide line and plates use IS-2062 code. As per the basis of Induction Tank Installation and fabrication Guide line provided.

5- We have to be designed and installation of Bio Gas Plants at Lokanete Baburao Patil Agro Industries Ltd. Augar on the above basis

6-As per the IS-803 booklet guide line the plate thickness shall be reduced due to the condition of acidic and alkalinity characteristic of influent. The life of the digester is about Approx.15 years. Subject to proper maintenance time to time.

Thanking You

ECOBOARD INDUSTRIES LIMITED * PUNE *

Anil P Bhosle

Assistant General Manager

Bio System Division

75259/2022/TECH-RD (Pune)

Annexure- XVII

DETAILS OF DECEASED AND INJURED PERSONS

List of deceased person and injured person

Sr.No.	Name	Age	Designation	Permanent/ contract	Salary	Education	Experience	Name of Hospital	No of days of Hospitalization	Hospitalization expenses	Nature of Injury	No of days he was absent from duty/could not joined the unit	Disability Certificates
Deceased person													
1	Jotiram dada Vagare	45	Pumpman	Permanent	11000	12th	19 Years	Rural Hospital Mohol	--	--	--	--	--
2	Suresh Ankush Chavan	22	Helper	Daily wages	8400	10th	4 Years		--	--	--	--	--
Injured person													
1	Sajjan Balu Jogadand	20	Pumpman	Daily wages	8400	10th	2 Years	Siddheshwar Hospital, Solapur	3 days	Copy enclosed	Miner	As workers on daily wages then not joined duty after the incident	NA
2	Mangesh Namdev Pachpund	24	Helper	Daily wages	8400	10th	4 Years		3 days	Copy enclosed	Miner	As workers on daily wages then not joined duty after the incident	NA
3	Mahesh dilip Bodake	20	Helper	Daily wages	8400	12th	2 Years		3 days	Copy enclosed	Miner	As workers on daily wages then not joined duty after the incident	NA
4	Kalyan Kisan Gurav	29	Watchman	Daily wages	8400	10th	10 Years		3 days	Copy enclosed	Miner	As workers on daily wages then not joined duty after the incident	NA
5	Parmashwar Madhukar Thite	25	Helper	Daily wages	8400	10th	3 Years		3 days	Copy enclosed	Miner	As workers on daily wages then not joined duty after the incident	NA
6	Raju Dattatray Gaikwad	20	Helper	Daily wages	8400	10th	2 Years		3 days	Copy enclosed	Miner	As workers on daily wages then not joined duty after the incident	NA
7	Ravendra Gajendra Kakade	29	Operator	Permanent	9500	12th	7 Years		5 days	Copy enclosed	Miner	Within 15 days	NA
8	Sanjay Bajirao Pache	54	contractor	-	-	-	-		3 days	Copy enclosed	Miner	As workers on daily wages then not joined duty after the incident	NA

Medical Supritendent
Rural Hospital, Mohol,
Dist. Solapur.

Medical Certificate

OPD Case No. 1342

Date ~~20/4~~ 15.4.21

This is to certify that, Mr./Mrs./Smt. Kalyan Kisan Gurav R/O Bitale aged about 20 years Male/~~Female~~ has been examined in this Center and found that, he/~~she~~ is not suffering from any organic as well as systemic disease except —. Clinically his/~~her~~ vision appears normal ~~with~~ /without spectacles. He/~~She~~ is not suffering from any communicable disease except —. He/~~She~~ is physically fit at Present

Identification Marks:-

(1) Black mole (R) side of nose

(2) _____

Medical Supritendent
Rural Hospital, Mohol,
Dist. Solapur.

Medical Certificate

OPD Case No:- 1339

Date:- 15. 4. 21

This is to certify that, Mr./Mrs./Smt. Mahesh Dilip Bodale R/O Anagar aged about 21 years Male/~~Female~~ has been examined in this Center and found that, he/~~she~~ is not suffering from any organic as well as systemic disease except ——. Clinically his/her vision appears normal ~~with~~ /without spectacles. He/~~She~~ is not suffering from any communicable disease except —. He/~~She~~ is physically fit at Present.

Identification Marks:-

(1) Black mole on (L) arm

(2) _____

75259/2022/TECH-RD (Pune)

Medical Supritendent
Rural Hospital, Mohol,
Dist. Solapur.

Medical Certificate

OPD Case No. 1343

Date 15.4.21

This is to certify that, Mr./Mrs./Smt. Parameshwar Madhukar Thite R/O Kalbandwadi aged about 25 years Male/~~Female~~ has been examined in this Center and found that, he/~~she~~ is not suffering from any organic as well as systemic disease except _____. Clinically his/her vision appears normal with /without spectacles. He/~~She~~ is not suffering from any communicable disease except —. He/~~She~~ is physically fit at Present.

Identification Marks:-

(1) Black mole on (L) side Neck

(2) _____

Medical Supritendent
Rural Hospital, Mohol,
Dist. Solapur.

Medical Supritendent
Rural Hospital, Mohol,
Dist. Solapur.

Medical Certificate

OPD Case No. 1367

Date 15.4.21

This is to certify that, Mr./Mrs./Smt. Raju Dattatray Gaikwad R/O Kurulwadi aged about 21 years Male/~~Female~~ has been examined in this Center and found that, he/she is not suffering from any organic as well as systemic disease except —. Clinically his/her vision appears normal with /without spectacles. He/She is not suffering from any communicable disease except —. He/She is physically fit at Present

Identification Marks:-

(1) Black mole on (L) cheek

(2)

Medical Supritendent
Rural Hospital, Mohol,
Dist. Solapur.

75259/2022/TECH-RD (Pune)

Medical Supritendent
Rural Hospital, Mohol,
Dist. Solapur.

Medical Certificate

OPD Case No. 1337

Date 15.4.21

This is to certify that, Mr./Mrs./Smt. Ravindra Gajendra kakade R/O Anafar aged about 24 years Male/~~Female~~ has been examined in this Center and found that, he/~~she~~ is not suffering from any organic as well as systemic disease except —. Clinically his/her vision appears normal with /without spectacles. He/~~She~~ is not suffering from any communicable disease except —. He/She is physically fit at Present

Identification Marks:-

(1) Black mole on (R) side of back

(2)

Medical Supritendent
Rural Hospital, Mohol,
Dist. Solapur.

Medical Supritendent
Rural Hospital, Mohol,
Dist. Solapur.

Medical Certificate

OPD Case No. 1341

Date 15.4.21

This is to certify that, Mr./Mrs./Smt. Sajjan Baliram Dafadand R/O Bitale aged about 20 years Male/~~Female~~ has been examined in this Center and found that, he/~~she~~ is not suffering from any organic as well as systemic disease except _____. Clinically his/~~her~~ vision appears normal ~~with~~ /without spectacles. He/~~She~~ is not suffering from any communicable disease except — . He/~~She~~ is physically fit at Present.

Identification Marks :-

(1) Black mole on (R) side Abdomen

(2) _____

Medical Supritendent
Rural Hospital, Mohol,
Dist. Solapur.

75259/2022/TECH-RD (Pune)

Medical Supritendent
Rural Hospital, Mohol,
Dist. Solapur.

Medical Certificate

OPD Case No:- 134

Date 15.4.21

This is to certify that, Mr./Mrs./Smt. Sanjay Bajirao Patil R/O Anagar aged about 37 years Male/~~Female~~ has been examined in this Center and found that, he/~~she~~ is not suffering from any organic as well as systemic disease except _____. Clinically his/her vision appears normal ~~with~~ /without spectacles. He/She is not suffering from any communicable disease except ___—___. He/~~She~~ is physically fit at Present

Identification Marks:-

(1) Black mole on chest.

(2) _____

Medical Supritendent
Rural Hospital, Mohol,
Dist. Solapur.

Annexure-XIX

ASSESSMENT OF COMPENSATION FOR DECEASED PERSON

Sr. no.	Name	Age at the time of death	Salary/ Income per month	Addition to income for future prospectus #		Deduction of personal & living expenses$	Total Income Per month	No. of months (one year)	Multiplier	Loss of Future Income	Loss of Love & affection	Loss of Estate & Funeral Expenses	Compensation
			(A)	(B)	C=A + B	(D)	E=C-D	(F)	(G)	(H=E xFx G)	(I)	(J)	(K=H+I+J)
1	Shri. Jotiram Dada Vagare (Skilled)	45	11000	3300	14300	4767	9553	12	14	1601600	2,00,000	50,000	18,51,600
2	Shri. Suresh Anukush Chavan (Semi Skilled)	22	10600	4,240	14,840	7420	7,420	12	18	1602720	2,00,000	50,000	18,52,720

(Refer **Annexure - XVII,** for deceased persons Details-Name, Age, Salary/Wages and **Para 6.2** for factors taken in computation of compensation. In case of Shri Suresh Anukush Chavan, as per information provided in **Annexure-XVII** by District Admn/Industry, the salary is Rs. 8000/ and he was temporary, and committee considered Rs. 10600 per month as per monthly minimum wages to the semi-skilled labour in Zone-3 as per order published by Office of Labour Commissioner, Govt of Maharashtra.

- Addition to income for future prospectus -30 % for Sr, No.1 & 40% for Sr No.2 of salary/monthly income
$- Deduction expenses for personal & living- 1/3 i.e. 33.33 % for Sr No. 1 & 50 % for Sr, No.2 of salary/monthly income

75259/2022/TECH-RD (Pune)

CIN - U74110PN2012PLC141952

LOKNETE SUGAR

LOKNETE BABURAO PATIL
AGRO INDUSTRIES LIMITED

◆ Founder : Rajan Baburao Patil (Ex. MLA) ◆ Chairman : Vikrant (Balraje) Rajan Patil

Loknete/Dist/ 710 /2021-2022 03/08/2022

To,

The Sub Regional Officer
4/B, Bali Block, Civil Lines, Opposite
Government Milk Scheme, Saat Rasta,
Solapur- 413003.

Sub: - Regarding information about DPR of spentwash spilled affected area.

Reference: i) Interim Report by the Expert committee O.A.No.274/2020 on NGT website
ii)Enquiry No. Loknete/Dist/585/2021-22 Dated 04/08/2021
iii) Enquiry No.Loknete/Dist/586/2021-22 Dated 04/08/2021
iv) Letter No.Loknete/Dist/614/2021-22 Dated 08/08/2021
v) NGT order OA No.274/2020 Dated 16.08.2021
vi) Work order No. Loknete/Dist/Pur/1188/2022-22 Dated 01/11/2021

Respected Sir,

With reference to above cited subject after submission of NGT expert committee of interim Report for O.A.No.274/2020 on NGT website. In this report committee recommended that a detailed study shall be conducted through reputed institute like college of Enginnering,Pune/Mahatma Phule Krishi Vidyapeeth,Pune etc to prepare DPR for given point in report. As per this report we had sent enquiry to both colleges – (**copy attached Annexure – I)** but they orally told to us they not doing this job because of lack of technical manpower and instruments then we again sent letter to Nodal Officer of expert committee for given permission DPR from VSI Pune but Nodal officer replied to us directed to prepare the DPR as per recommendation strictly no substitute agency will be considered - (**copy attached Annexure – II)** then our advocated mentioned this point in front of NGT on hearing day then NGT recommended prepared DPR from IIT Mumbai.

We got NGT order and in this order mentioned prepared DPR of spentwash spilled affected area from IIT Mumbai. As per the NGT order we have given work order to IIT Mumbai (work order No.Loknete/Dist/Pur/1188/2022 Dated 01/11/2021) for making DPR of spentwash spilled affected area. - (**copy attached Annexure – III)** and also given the payment as per there terms and condition (**copy attached Annexure – IV).**

Accordenlly, IIT Mumbai team visited 4 times to our site and taken various location Soil Samples, Water Samples and spentwash samples.-(**Details Copy Annexure-V)**

We have taking follow-ups of IIT Mumbai to submit this report as early as possible.

This is your Kind Information

Thanking You,

Yours Faithfully,

O.S.Jogade
(Chief Executive Officer)

Copy Enclosed :

1) *Work order Copy of IIT Mumbai (Annexure-III)*
2) *Payment Details of IIT Mumbai (Annexure-IV)*
3) *Details of sampling (Annexure-V)*

copy to
i) Regional Officer
MPCB Pune
ii) Regional Officer
CPCB Pune

75259/2022/TECH-RD (Pune)

Annexure – I

GSTIN No. 27AACCL1665M1Z7 PAN No. AACCL165M
Gram: **LOKNETE SUGAR, MOHOL**
Loknete Baburao Patil Agro Industries Limited, Laxminagar, Angar, Tal-Mohol, Dist –Solapur, Pin- 413 214
E-mail : loknete_sugar@rediffmail.com Phone No. (02189) 248699, 248799 Fax: 248899

ENQUIRY

Loknete/ Dist/ 585 /2021-22 04/08/2021

To,
The Principal,
Mahatma Phule Krishi Vidyapith,
Shivajinagar, Pune.

Subject: Quotation for Detailed Project Report (DPR) of spent wash spilled Affected area.

Respected Sir,

With reference to above cited subject & reference we want detailed study through reputed institute to prepare Detailed Project Report (DPR) which may include;

i) Delineation of impacted area due to spillage of spent wash including pits/drains/nallahs/bunds.
ii) Detailed soil characteristics analysis/investigation with assessment of soil qualities in the affected areas and depth levels to which the same are affected.
iii) The soil samples beneath the ground surface (up to 50 cm) should also be collected around 1 m from periphery of the affected area as after percolation, the waste water will travel horizontally so the actual affected area needs to be determined.
iv) Receptors and pathways analysis.
v) Required of remediation, if any, based on the above receptors and pathways analysis.
vi) In case remediation is required, details of required remediation treatment such as in-situ treatment (bio-remediation/phyto-remediation/air purging/etc.) or off-side treatment (soil excavation and management of excavated soil) along with engineering details & time period and cost thereof with expected target quality/goals in terms of various parameters of concern.

vii) Feasibility of utilizing the reaming 1,053.8MT of excavated contaminated soil in bio-compost making ensuring compliance of all parameters stipulated under FCO standard. In case bio-composting is not feasible, details of alternate management options of the same be also provide.

viii) We have scraped the soil bellow 40 cm of surface nearly about 5750 M.T. from which 1053.8 MT remains. It's analysis to be done. This scraped soil is mixed in compost, Remaining 1053.8 M.T. scraped soil will be mixed in coming season .You have to suggest weather this scrapped soil can mix as per FCO standard .If not what necessary action shall be taken.

Now, we want Detailed Project Report (DPR) of spent wash spilled affected area including above mentioned points

Hence you are requested to send quotation immediately.

Thanking you.

Yours Faithfully,

(Mr. O. S. Jogade)
Chief Executive officer

75259/2022/TECH-RD (Pune)

GSTIN No. 27AACCL1665M1Z7 PAN No. AACCL165M
Gram: LOKNETE SUGAR, MOHOL
Loknete Baburao Patil Agro Industries Limited, Laxminagar, Angar, Tal-Mohol, Dist –Solapur, Pin- 413 214
E-mail : loknete_sugar@rediffmail.com Phone No. (02189) 248699, 248799 Fax: 248899

ENQUIRY

Loknete/ Dist/586/2021-22 04/08/2021

To,
Government College
Pune.

Subject: Quotation for Detailed Project Report (DPR) of spent wash spilled Affected area.

Respected Sir,

With reference to above cited subject & reference we want detailed study through reputed institute to prepare Detailed Project Report (DPR) which may include;

ix) Delineation of impacted area due to spillage of spent wash including pits/drains/nallahs/bunds.

x) Detailed soil characteristics analysis/investigation with assessment of soil qualities in the affected areas and depth levels to which the same are affected.

xi) The soil samples beneath the ground surface (up to 50 cm) should also be collected around 1 m from periphery of the affected area as after percolation, the waste water will travel horizontally so the actual affected area needs to be determined.

xii) Receptors and pathways analysis.

xiii) Required of remediation, if any, based on the above receptors and pathways analysis.

xiv) In case remediation is required, details of required remediation treatment such as in-situ treatment (bio-remediation/phyto-remediation/air purging/etc.) or off-side treatment (soil excavation and management of excavated soil) along with engineering details & time period and cost thereof with expected target quality/goals in terms of various parameters of concern.

vii) Feasibility of utilizing the reaming 1,053.8MT of excavated contaminated soil in bio-compost making ensuring compliance of all parameters stipulated under FCO standard. In case bio-composting is not feasible, details of alternate management options of the same be also provide.

viii) We have scraped the soil bellow 40 cm of surface nearly about 5750 M.T. from which 1053.8 MT remains. It's analysis to be done. This scraped soil is mixed in compost, Remaining 1053.8 M.T. scraped soil will be mixed in coming season .You have to suggest weather this scrapped soil can mix as per FCO standard .If not what necessary action shall be taken.

Now, we want Detailed Project Report (DPR) of spent wash spilled affected area including above mentioned points

Hence you are requested to send quotation immediately.

Thanking you.

Yours Faithfully,

(Mr. O. S. Jogade)
Chief Executive officer

09/8/2021

आवक लिपीक
अभियांत्रिकी ... ालय
पुणे-...

75259/2022/TECH-RD (Pune)

Annexure – II

CIN - U74110PN2012PLC141952

LOKNETE SUGAR

LOKNETE BABURAO PATIL AGRO INDUSTRIES LIMITED

Ref. No Loknete/ Dist/ 13 /2021-22 Date 08/08/2021

To,

Nodal Officer
Joint Committee,
c/o.MPCB

Subject: Regarding permission for DPR preparation from Vasantdada Sugar Institute, Pune

Reference: Interim Report by the Expert Committee O.A No. 274/2020 on NGT Website.

Respected Sir,

With reference to above cited subject after submission of NGT expert Committee of interim Report for O.A.No.274/2020 on NGT website. In this report committee recommended that a detailed study shall be conducted through reputed institute like college of Enginnering,Pune/Mahatma Phule Krishi Vidyapeeth,Pune / etc to prepare DPR for given point in report.

Vasantdada Sugar Institute is reputed institute in sugar ,Co-gen, & distillery, therefore we wish to carry preparation of DPR work from vasantdada Sugar Institute,Pune But in expert committee report the VSI, Pune not mentioned.

Therefore requested to you give the permission for DPR preparation from Vasantdada Sugar Institute, Pune.

Thanking you.

Received on Dt. 10/8/2021
Clerk
P. O. M. P. C. B. Pune

Yours faithfully,

(Mr. O. S. Jogade)
Chief Executive officer

Laxminagar, Angar, Tal. Mohol, Dist. Solapur, Maharashtra, Pin-413214. Tel :(02189) 248699,248799, Fax :(02189)248899
E-mail: loknetesugar@gmail.com \ loknete_sugar@rediffmail.com

75259/2022/TECH-RD (Pune)

Gmail

Loknete Sugar Angar <loknetesugar@gmail.com>

Regarding permission to conduct the DPR from Vasantdada Sugar Institute Pune

RO Pune <ropune@mpcb.gov.in> Fri, Jan 7, 2022 at 1:29 PM
To: "loknete_sugar@rediffmail.com" <loknete_sugar@rediffmail.com>, "loknetesugar@gmail.com" <loknetesugar@gmail.com>
Cc: SRO Solapur <srosolapur@mpcb.gov.in>

You have submitted letter to this office regarding permission for DPR preparation from Vasantdada Sugar Institute Pune instead of COEP/Mahatma Phule krushi Vidyapeeth. In view of this you are directed that the said recommendation has made by the Committee members and submitted to the Hon'ble NGT. Hence, you are directed to prepare the DPR as per recommendation strictly. No substitute agency will be considered, please note.

Regards,
Nitin Shinde,
Regional Officer, Pune.

DM

DCP

Annexure – III

GSTIN NO. 27AACCL1665M1Z7
PAN NO AACCL1665M

LOKNETE BABURAO PATIL AGRO INDUSTRIES LTD
Laxminagar, Angar, Tal-Mohol, Dist- Solapur. Maharashtra - 413214.
E-Mail: loknetesugar@gmail.com Phone No. (02189)248699, 248799, Fax: 248899

Loknete/Dist/Pur/ 1188 /2021-2022 Date:01/11/2021

WORK ORDER (DIST)

To,
IIT Bombay,
Main Gate, Rd.IIT Area,
Powai,Mumbai, Maharashtra-4000076

Kind Attn-Dr.Bakul Rao

Subject: - Regarding Project Report (DPR) of spent wash spilled affected area.

Reference: - 1) Our mail Dated -04/10/2021
2) Our mail Dated- 05/10/2021

Dear Sir,

With reference to above cited subject and reference we have placed Work order with you for Project Report (DPR) of spent wash spilled affected area.

Therefore you are requested to start the Project Report (DPR) work immediately

Sr. No.	Description	Amount
1.	Total Budget for the estimated without institutional charges	35,60,000/-
2	Institutional Charges @20%	7,12,000/-
3	Grand Total	42,72,000/-
4	GST @18%	7,68,960/-
5	**Final Cost including GST**	**50,40,960/-**

Scope of work:-

1. Delineation of impacted area due to spillage of spent wash including pits/drains/nallahs/bunds:
2. Detailed soil characteristics analysis/investigation with assessment of soil qualities in the affected areas and depth levels to which the same are affected.
3. The soil samples beneath the ground surface (up to 50cm) should also be collected around 1 m from periphery of the affected area as after percolation, the wastewater will travel horizontally so the actual affected area needs to be determined.
4. Receptors and pathways analysis;

75259/2022/TECH-RD (Pune)

5. Requirement of remediation if any, based on the above receptors and pathways analysis;
6. In case remediation is required, details of required remediation treatment such as in-situ treatment (bio-remediation/phyto-remediation/air purging/etc.) or off-site treatment (soil excavation and management of excavated soil) along with engineering details & time period and cost thereof with expected target quality/goals in terms of various parameters of concern.
7. Feasibility of utilizing the remaining 1,053.8 MT of excavated contaminated soil in bio-compost making ensuring compliance of all parameters stipulated under FCO standards. In case bio-composting is not feasible, details of alternate management options of the same be also provide.

Terms & Condition:-

1. F.O.R: Our Karkhana site.
2. Work: Start Immediate.
3. Tax : Including GST.
4. Payment: 100% Advance before starting of Work.

Yours Faithfully

Purchase Officer *Distillery Manager* *Chief Executive Officer*

Copy to: - Pur/Dist /Acct/Store/Mf.

Annexure-IV

SBI

Date	: 3 Aug 2022
Account Number	: 00000032163979105
Description	: CA-REGULAR-PUB-OTH-ALL-INR
Name	: LOKNETE BABURAO PATIL AGRO INDUSTRIES LTD
Currency	: INR
Corporate Address	AT POST- ANGAR TAL-MOHOL SOLAPUR Solapur 27-413214
Branch	: MOHOL(00288)
Rate of Interest (% p.a.)	: 0.0%
IFS Code	: SBIN0000288
Book Balance	: 11296437.80
Available Balance	: 11296437.80
Hold Value	: 0.00
MOD Balance	: 0.00
Uncleared Amount	: 0.00
Balance as on 14 Dec 2021	: 1,75,67,189.55

Account Statement from 14 Dec 2021 to 14 Dec 2021

Txn Date	Value Date	Description	Ref No./Cheque No.	Branch Code	Debit	Credit
14/12/2021	14/12/2021	BY TRANSFER-RTGS UTR NO: HDFCR52021121483441187-RENUKA ENTERPRISES	TRANSFER FROM 3199860044304 / RENUKA ENTERPRISES	4430		18,00,000.00
14/12/2021	14/12/2021	BY TRANSFER-RTGS UTR NO: HDFCR52021121483471446-NEW JARWARI TRADING COMPANY	TRANSFER FROM 3199860044304 / NEW JARWARI TRADING COMPANY	4430		3,84,038.00
14/12/2021	14/12/2021	TO TRANSFER-INB BILL_MAHAOL Payments-	WSBI0478691076CHI2020581 TRANSFER TO 31995891620981	99922	23,135.40	
14/12/2021	14/12/2021	BY TRANSFER-RTGS UTR NO: HDFCR52021121483468117-RANANI BROTHERS	TRANSFER FROM 3199860044304 / RANANI BROTHERS	4430		2,44,388.00
14/12/2021	14/12/2021	BY TRANSFER-INB ADVANCE PAY TO LOKNETE-	CTQ3847006 TRANSFER FROM 38837581764 MAHAVEER SUGARS /	99922		6,27,827.00
14/12/2021	14/12/2021	TO TRANSFER-INB-	711491513203 3CHI2024092	99922	6,011.80	
14/12/2021	14/12/2021	TO TRANSFER-INB CONSULTANCY PAYMENT-	CTQ3853501 TRANSFER TO 10725729173 IIT BOMBAY PROJ CONSUL /	99922	46,12,896.00	
		NO: ICICR42021121400515149 -GIRRAJ JI ENTERPRISES	GIRRAJ JI ENTERPRISES			2,33,228.00
14/12/2021	14/12/2021	BY TRANSFER-RTGS UTR NO: ICICR42021121400516265 -JAIN SUGAR	TRANSFER FROM 3199860044304 / JAIN SUGAR	4430		9,98,550.00
14/12/2021	14/12/2021	BY TRANSFER-RTGS UTR NO: ICICR42021121400521955 -GIRRAJ JI ENTERPRISES	TRANSFER FROM 3199860044304 / GIRRAJ JI ENTERPRISES	4430		6,66,365.00

Annexure-V

Visit Date	Sample Collection	Soil Samples	Water Samples	Spentwash Samples
15-09-2021	Preliminary Visit			
09-01-2022	Phase-I	19	4	2
23-02-2022	Intermediate	1		
30-03-2022	Phase-II	44	2	
	Grand Total	**64**	**6**	**2**