

INSPECTION REPORT OF M/S SARAYA DISTILLERY, SARDAR NAGAR, GORAKHPUR (UP)

In compliance of Member Secretary, UPPCB, Lucknow order dated 06.08.2015, inspection of M/s Saraya Distillery, Sardar Nagar, Gorakhpur was carried out jointly by officials of H.O., Lucknow and, Regional Office, Gorakhpur on dt. 07.08.2015. During inspection, unit was found closed in compliance of Hon'ble NGT order. Sailable details, observations and recommendations regarding the unit are as given below :

A: General Information	
Name of the unit and Address	M/s Saraya Distillery Sardar Nagar, Gorakhpur(UP)-273202
Name of the Proprietor/ Contact person – Designation Contact No.	Mr. Gurumukh Singh, General Manager-Country Liquor 9935596234
Year of Commissioning.	1951
Sector	Private
Production capacity • Products • Installed Production Capacity • Present Production	RS(Rectified Spirit)/ENA(Extra Neutral Alcohol) 110 KLD Industry was under closure in compliance of Hon'ble N.G.T. order.
Raw materials & their requirement	Molasses, Yeast, Nutrient & Chemicals etc.
B: Water Pollution and its Control:	
Water Supply Source Water Consumption (KLD) ➤ Industrial ➤ Domestic	Tube Well Approx. 430.KLD (as reported) Approx 12 KLD (as reported)
Waste Water Generation (KLD) ➤ Industrial ➤ Domestic	Approx 1100 KLD(spent wash) -on full production capacity@10KL/KL of Alcohol production) Approx 10 KLD (as reported)
Waste water treated (KLD) ➤ Industrial ➤ Domestic	Approx 1100 KLD (spent wash) -on full production Approx 10 KLD

Details of ETP	
➤ ETP Description with flow diagram	Buffer Tank (01No.), Anerobic-digester (02No), Lamela Candle filter (02No.) Gas holder (02No.), Gas Flaring Tower (01No.) Reverse Osmosis plant and Bio-composting
➤ Details of RO, if any	Clarifier-I with buffer tank, Bio-reactor coarse bubble diffusers with piping accessories, Clarification feed pump skid(Part of Industrial Filter WTP), Aeration system blower, Bag filter skid, UF Skid, Polymer dosing system, UF back wash pump with dosing system attached with CIP unit with tank, De-gasser with blower, Clarifier-II with buffer tank.
➤ Details of Multi Effect Evaporator, if any	Multi effect evaporator not installed
Mode of disposal of treated effluent	Spent wash generated from the process is used for bio-composting after anaerobic digestion and reverse osmosis. Effluent generated from floor washing, spent lees, bottling section effluent etc. are sent to Water Treatment Plant (WTP).Treated effluent from WTP is used for gardening.
Flow measuring device installed at outlet of ETP	Flow measuring device was installed for the measurement of spent wash generated from process .However, no flow meter is installed for effluent generated from flour washing, spent lees, Bottling section effluent etc.
Status of Consent under the Water Act- 1974	Applied.
b (I) Information regarding Bio-composting	
Active area for bio compost preparation	29 Acre
Area for press mud storage	04 Acre
Area for bio compost storage	02 Acre
Spent wash storage capacity	78000 m ³ (RO reject storage lagoon), 10,200 m ³ (Fermentor wash sludge lagoon), 12200 m ³ (Bio-methanated spent wash settling tank),which is equivalent to the 223 days of spent wash storage capacity(on full production.)
Availability of press mud	nearby sugar mills
Quantity of compost prepared	5474.0 MT from April,2014 to March,2015 (as reported)
Quantity of press mud procured	21093.92MT from January ,2015 to March,2015 (as reported)
Details of wind roses (Number, length, height, width of stacking, space between two wind rose)	Finished Bio-compost and press mud was found stored in Bio-compost yard. The finished bio-compost was found partially covered with plastic sheet.
Quantity of Effluent being used for composting (m ³ /day)	225 m ³ /day to 450 m ³ /day (as reported)
Quantity of press mud being used for one cycle	4000 MT to 5000 MT (as reported)
Maturity time in days for one cycle	45 days

Arrangement for rainy season	HDPE sheet arrangement
B (II) Information regarding Ferti-irrigation	
Details of treatment of spent wash (details of bio methanisation, primary and secondary treatment)	Not Applicable
Command area for irrigation (available land area)	Not Applicable
System for dilution of treated effluent required for ferti-irrigation	Not Applicable
System of transportation of treated effluent upto field.	Not Applicable
Formal agreements with farmers for using treated effluent	Not Applicable
Storage facility available for treated effluent during low demand period	Not Applicable
Quality of effluent being used for ferti-irrigation	Not Applicable
Ground water monitoring network	Not Applicable
C: Air Pollution and its Control	
Sources of Air Pollution	Boiler-22 TPH
<ul style="list-style-type: none"> > Type of Fuel used with consumption > Stack details with APCS 	Rice Husk-75 ton/day & Bio gas- 40000 Nm ³ /day at 100% Production Capacity utilization as reported by the unit. Stack height-30 mtr;Dia.1350 mm, APCS - Multi Cyclone
Status of Consent under the Air Act- 1981	Applied
D: Waste Management	
Type & Quantity of Waste Generated	Fermentation sludge- 1.5 % of total prepared wash (as reported) Boiler ash- approx. 10.5 Ton/day (as reported)
Facility of Storage/ Disposal	Fermentation sludge is used in bio-compost & Boiler ash is used for land filling (as reported).
Disposal of waste	Same as above

Observations:

1. The installed capacity of the industry for the production of Rectified Spirit (RS) and Extra Neutral Alcohol (ENA) is 110 KLD. For this the unit have installed 02 distillation units each having capacity of 55 KLD. Molasses is used as main raw material. During inspection, unit was under closure in compliance of Hon,ble N.G.T. Order. The



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distillation system of one unit is based on partial pressure without reboiler and another unit is based on multi-pressure distillation with reboiler.

2. In compliance of Hon'ble NGT order dated 19.01.2015, production was stopped by the unit on dt. 23.01.2015. After that unit submitted application dt. 06.02.2015 & 10.02.2015 to Board for conducting joint inspection. Order passed by the Hon'ble NGT in case of unit is as given below.

"once unit complies with all the conditions and becomes complying and non-polluting, the unit will apply to the Board which then shall conduct joint inspection with CPCB and before granting and /or renewing the consent, the inspection report shall be taken into consideration".

Board granted permission for operation of the unit on dt. 19.03.2015 till the joint inspection is carried out. Unit started its distillation process on dt. 20.03.2015 & joint inspection was carried out on dt. 17.04.2015. Industry informed the Board vide letter dt. 20.04.2015 that unit has stopped distillation plant on dt. 21.04.2015. Joint inspection report was submitted by inspecting officers on dt. 25.05.2015. On the basis of recommendations given in the inspection report dated 17.04.2015 the industry has complied of its and as per a committee has been constituted by member Secretary on dated 25.06.2015, the inspection of the concerned unit was carried out on dated 26.06.2015. The inspection report was submitted by inspecting officers on dated 29.06.2015.

3. The unit is meeting its fresh water requirement from ground water using 02 nos. of tube wells. Unit have installed water meter on the common header/pipe of the tube wells.
4. The unit will generate approximately 1100 KLD spent wash on full production capacity utilization @ 10KI/KL of alcohol production. The unit has installed following system for the management/treatment of spent wash :
 - o Spent wash received from distillation plant (temp. 85 deg C) is collected in Buffer Tank (12.7mX39.6mx3m) to reduce temp. of spent wash upto 70 deg. C. Flow meter has been installed by the unit for measurement of spent wash generation. The spent wash is then passed through Pre Heat Exchanger and fed to Anaerobic-digesters (02 nos. with size Height-20 m, dia.-29m and Height-21.39m, dia.-30 m) for reduction of BOD and COD.
 - o Gas generated from the Anaerobic Digesters is collected into gas holders and used as fuel in boiler or flare to the atmosphere. The overflow of Anaerobic Digesters is fed to de-gasifier and then Lamella Clarifier for sludge settlement.



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- Part of sludge is recycled in Anaerobic Digesters and remaining is used for bio-composting after settling.
- Bio-methanated spent wash is collected into a tank of capacity 12200 m³ for the sludge settling. The spent wash treated from anaerobic digesters is then fed to Reverse Osmosis (RO) Plant for reducing the volume of treated spent wash. As reported by the unit, installed capacity of RO Plant is 1200 m³/day. The average separation of spent wash is 50% reject and 50% permeate. Permeate is being used as cooling tower make up and boiler feed water after treating through DM water plant.
 - RO reject is conveyed through open drain to Lagoon having capacity 78,000 m³, where from it is used for bio-composting used press mud as filler material.
 - The unit has approx. 35 acres of land for the bio-composting. As reported, the unit has provided 29 acres for active bio-composting, 04 acres for press mud storage and 02 acres for prepared-bio-compost storage.
5. The unit has lagoon of capacity 10,200 m³, which was previously being used for Fermentor wash sludge storage. During inspection, lagoon was not being used by the unit.
 6. At the time of inspection it was found that unit has installed 10 No. batch Fermentors equipped with inside cooling system attached with plate type heat exchanger.
 7. As reported, fermentor cleaning effluent is collected into hopper bottom settling tank for Solid-Liquid separation. Supernatant of hopper bottom tank is reused in distillation unit and sludge is used in bio-composting.
 8. As reported Spent lees generated are partially reused for molasses dilution.
 9. As reported, liquid spilled out from gland leakages are collected in sump and are reused in distillation unit.
 10. As reported, Boiler blow down, DM plant regenerate is used for ash quenching.
 11. Floor washing, cooling tower overflow, spent lees, softner plant backwash etc., which comes out approximately 70-72KLD, is sent to Water Treatment Plant (WTP), which comprises of sand filter plain sedimentation tank, aeration tank equipped with diffused aeration system, Final sedimentation tank, De-gasifier, polishing tank, nutrient dosing tanks and sludge drying beds. As reported, Treated effluent from WTP is used for the gardening.
 12. During inspection, finished Bio-compost was found stored on bio-compost area partially covered with plastic sheet.



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13. The unit has installed four hand pumps near the bio-compost yard.
14. The unit has one Aerotreller, 02 JCB and 6 tanker for the bio-composting.
15. At the time of inspection industry representative told that before the notification of Water (Prevention & Control of Pollution) Act, 1974, practice of spent wash storage in Kacha Lagoon was being adopted by the industry. At the time of inspection one side wall of existing lagoons have been dismantled. The existing lagoons are not being used for holding of the effluent. Coloured water comes out as seepage from the ground from that bank of the Vaisi Drain where lagoons were situated. Thus, water coming out from ground as seepage deteriorates the water quality of Vaisi Drain and Faren Nala.
16. The unit has 02 DG sets of capacity 1000 KVA & 750 KVA.
17. The unit has one boiler with capacity 22 TPH using bio-gas and rice husk as fuel.

Point wise compliance regarding the recommendations given by the joint inspection team of CPCB and SPCB in the report submitted on dt. 25.05.2015 and observation of the joint inspection team of SPCB on dated 26.06.2012 is as given below :

1. Although acoustic enclosures are not installed by the unit but DG sets have been shifted from open area into a closed room and the height of stack attached to DG sets has been raised.
2. Drain situated in the back of the unit and passing through the nearby village was found dismantled up to the inlet of soak pit.
3. Separate arrangements for collecting and carrying of industrial effluent was made by the unit.
4. Collections sumps have been made by the unit and effluent transfer pump also has been installed.
5. The unit has upgraded the existing effluent treatment plant.
6. Earlier on inspection dated 26.06.2015 the industry representative told that unit is in the process of procuring one more aero tiller to improve the bio composting but till the date of inspection it was not found on the site.
7. The unit has made proper arrangement for storage of finished bio compost.
8. The unit has installed 4 No. of shallow hand pumps near the bio composting area.
9. The unit is not fully complying the protocol of bio composting.
10. The industry representative told that multi effect evaporator will be erected and commissioned by dt. 31.03.2016



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11. The industry representative told that order has been placed for online monitoring system for Stack but till the inspection it was not found on the site. Web camera is required for the unit in place of online effluent analysis system. Online web camera has been installed by the industry at the final outlet of the factory near Vaisi Drain.
12. As reported by the industry representative that the unit is in contact with National Institute of Hydrology, IIT, Roorkee for study of ground water pollution.
13. As reported, unit should maintain all the records as mentioned in point no. 13 of recommendations of joint inspection report submitted on dt.25.05.2015
14. As reported, practice of scientific disposal of ash shall be adopted by the unit in near future.
15. Industry representative told that compliance of point no. 15 shall be done by the unit in near future.
16. Applied to CGWA for permission.

Recommendations :

The industry has not completely dismantled the existing kachcha lagoons situated near the Vaisi drain. The unit also not purchased the additional one number aero tiller for improving the processes of bio-composting. The industry has not installed the online stack monitoring system and also not submitted bank guarantee for installing the same. So the permission for operation of the unit may not be allowed.

Inspection Team:

1. Sh. N.K. Chauhan, E.E., Circle-6, H.O., Lucknow
2. Dr. S.C. Shukla, A.S.O., UPPCB, Gorakhpur

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5/8/15
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07/8/15