



P-539-MSML-DISTILLERY-22020

(Revision - 01)

**SUMMARY ENVIRONMENTAL IMPACT ASSESSMENT
(EIA) REPORT
(IN ENGLISH AND MARATHI)**

FOR

**ESTABLISHMENT OF 45 KLPD MOLASSES/CANE JUICE
BASED DISTILLERY**

BY

MUKTESHWAR SUGAR MILLS LTD.

**DHAMORI (BK), TAL.: GANGAPUR, DIST.: AURNAGABAD,
MAHARASHTRA**

PREPARED BY



EQUINOX ENVIRONMENTS (I) PVT. LTD.

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An ISO 9001 : 2015 & QCI - NABET Accredited Organization



JUNE - 2020



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GST No. 27AAECM9672M1ZP

MFG/2020-21/123

Dtd- 15/07/2020

To,

The Member Secretary

Maharashtra Pollution Control Board (MPCB);
3rd & 4th Floor, Kalpataru Point,
Sion Circle, Sion (E),
Mumbai - 400 022

Sub.: Application for 'Public Hearing' to be conducted for proposed 45 KLPD molasses/cane juice based distillery by -Mukteshwar Sugar Mills Ltd. (MSML), located at Gat No. 190, 191, 192, 194, 195, 196, 197, 198, A/p: Dhamori (BK), Tal.: Gangapur, Dist.: Aurangabad, Maharashtra State.

Ref.: 'Terms of Reference' (ToR) granted vide letter no. IA-J-11011/24/2020-IA-II(I) dated 30.04.2020. Copy enclosed at Enclosure - I.

Dear Sir,

We -"Mukteshwar Sugar Mills Ltd." have planned to establish 45 KLPD molasses/cane juice based distillery at Gat No. 190, 191, 192, 194, 195, 196, 197, 198, A/p: Dhamori (BK), Tal.: Gangapur, Dist.: Aurangabad, Maharashtra State

Accordingly, an application in Form - 1 format was submitted to the 'Ministry of Environment, Forest and Climate Change (MoEFCC); New Delhi' for grant of ToR's on 24.01.2020. Subsequently, standard ToR's were granted on 30.04.2020. Refer Enclosure - I for copy of ToR letter. In the ToR letter, directions were given to conduct Public Hearing w.r.t. our proposed distillery project. Now, in order to conduct Public Hearing, we hereby are submitting all the relevant documents and information to your office.

Along with the Public Hearing application, a draft EIA Report as per the generic structure stipulated in MoEF Notification No. S.O.1533 (E) dated 14.09.2006 as amended vide Notification No. 3067 (E) dated December 01, 2009 and Executive Summary Report in two languages (English and Marathi) are enclosed separately. The same provide details of Pollution Control Facilities, Production Processes and Raw Materials as well as Finished Products and Environmental Management Plan (EMP) etc. regarding the unit.

'Twenty Sets' of various documents, as mentioned above and equivalent number of soft copies of same have been submitted for your information and necessary further action. Also, a Demand Draft of Rs. 25,000/- (Rs. Twenty Five Thousand only) Bearing No. drawn on dated towards the Public Hearing charges, as decided by the govt., has been presented herewith.

Please do the needful and oblige.

Thanking you.

Your faithfully

for **Mukteshwar Sugar Mill Ltd.**

A.B. Patare

Chief Executive Officer



- Encl.:** 1. Executive Summary of project
2. A Draft EIA Report
3. A D.D. bearing no. dated drawn on

ACKNOWLEDGEMENT

I am extremely thankful to the management of **Mukteshwar Sugar Mills Ltd. (MSML)**, located at Gat No.190, 191,192, 194,195,196, 197, 198, Dhamori (BK), Tal.: Gangapur, Dist.: Aurangabad, in Maharashtra for entrusting assignments of the EIA study and Environmental Clearance procurement in respect of proposed establishment of 45 KLPD molasses/cane juice based distillery. It was indeed a great experience to have interactions, involvement and discussions with the management and technical experts of MSML. Their knowledge and co-operation as well as support given during the draft EIA Report preparation impressed me a lot. Sharing of thoughts and planning with Mr. Sachin Nikam Chairman of MSML was always an interesting thing during the course of assignment. Thank you very much sir!

Prompt response as well as help from Mr. Annasaheb B. Patare Chief Executive Officer of MSML during providing certain information, documentation and data related to the production, processes and details of manufacturing is duly appreciated. Also, the co-operation of staff of MSML is duly acknowledged here.

I must thank our Functional Area Experts Sulakshna Ayarekar, Yuvraj Damugade, Jaydeep Patil, Sandip Mangalekar & Anup Gargate, as well as our other Empanelled Functional Area Experts Dr. J. B. Pishte, Mr. Vinod Sahasrabuddhe, Mr. Vinaykumar Kurakula, Mr. Balkrishna Lole & Mr. Rahul Deshmukh for their able and timely contributions in the draft EIA studies and report preparation. Despite their busy schedules in the universities, colleges and own professions, they were always available, on time, for the necessary inputs; field visits and discussions.

My staff of the EIA Study Cell here must receive a commendation and credit for all the in-house management and inputs during the monitoring, report preparation and presentations. Our other In-house experts of various functional areas have also contributed their best.

Last but not the least, the contributions from my non-technical staff and laboratory team is also duly appreciated here.



DR. SANGRAM GHUGARE

Chartered Engineer
Chairman & MD

Equinox Environments (India) Pvt. Ltd. (EEIPL); Kolhapur

CAUTION

The information, data, figures, flow charts and drawings in respect of manufacturing processes, mass balance, chemical reactions, production layouts and instrumentation details included in this Environmental Impact Assessment (EIA) Report are the sole property of **Mukteshwar Sugar Mills Ltd. (MSML)**, located at Gat No.190, 191,192, 194,195,196, 197, 198, Dhamori (BK), Tal.: Gangapur, Dist.: Aurangabad, in Maharashtra State. Some of the products, reactions and process methodologies may be patented.

The style and format of this Draft EIA Report as well as the data, processing and presentations of various environmental features, environmental management planning; designs; drawings; plates; calculations, demonstrations on attributes towards pollution control and abatement aspects etc. are the intellectual property of **M/s. Equinox Environments (India) Pvt. Ltd. (EEIPL); Kolhapur.**

All maps (District, State, Country etc.) enclosed in this reports for referring information are purely indicative, graphical & not to scale.

Under no circumstances, any part of this report may be used; reproduced; translated; recorded or copied in any form and manner except by the Govt. authorities requiring this report for taking decisions, based on details and information provided in same, during the Environmental Clearance procedure carried out as per EIA Notification No. S.O. 1533 (E) dated 14.09.2006 as amended from time to time.

Equinox Environments (India) Pvt. Ltd. (EEIPL); Kolhapur
Environmental, Civil and Chemical Engineers, Consultants & Analysts
ISO 9001: 2015 & QCI-NABET accredited Organization



CERTIFICATE

Declaration by Expert contributing to the Draft EIA in respect of proposed establishment of 45 KLPD molasses/cane juice based distillery by **Mukteshwar Sugar Mills Ltd. (MSML)**, located at Gat No.190, 191,192, 194, 195, 196, 197, 198, Dhamori (BK), Tal.: Gangapur, Dist.: Aurangabad, in Maharashtra State.

We, hereby, certify that we were a part of the Draft EIA team in the following capacities that developed the above EIA.

Project No. P-539-MSML-DISTILLERY-22020

EIA Coordinators



Name : Dr. Sangram Ghugare





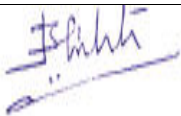


Period of Involvement : October 2019 – July 2020


Contact Information : eia@equinoxenvi.com

Functional Area Expert:

Sr. No.	Functional Area	Name of the expert/s	Involvement (Period & Task)	Signature
1	WP	Dr. Sangram Ghugare	October 2019 to July 2020 <ul style="list-style-type: none">• Study of process and operations• Site visit and finalization of water sampling locations• Preparation of water balance and identification of wastewater generation.• Evaluation of water pollution & control management• Identification of impacts, suggestion and finalization of mitigation measures• Study on Treatment of effluents through existing ETP and to be upgraded under proposed expansion was contemplated and designs were done accordingly.	
2	EB	Sulakshna Ayarekar & Mr. Anup Gargate	October 2019 to December 2019 <ul style="list-style-type: none">• Selection of Site for conducting ecological & biodiversity status of the study region.• Interaction with Govt. offices and agencies for certain secondary data and information pertaining to region specific issues• Study of terrestrial fauna by sighting, noting pug-marks, calls, sounds, droppings, nests and burrows etc.• Interaction with local residents for obtaining information about various	

Sr. No.	Functional Area	Name of the expert/s	Involvement (Period & Task)	Signature
			<p>species of animals and birds usually observed their existence and importance in the study region.</p> <ul style="list-style-type: none"> • Review of rules, legislation and criteria towards knowing and understanding inclusion in the study region of any eco-sensitive zones, wild life sanctuary. • Collection, compilation and presentation of the data as well as incorporation of same in to the EIA report. 	
3	SE	Mr. Rahul Deshmukh	<p>October 2019 to December 2019</p> <ul style="list-style-type: none"> • Collection of data on socio-economic aspects in study area through surveys. • Public opinions and recording of events for future industrialization in the study area. • Study of sociological aspects like human settlement, demographic and infrastructural facilities available in study area. • Compilation of primary and secondary data and its inclusion in EIA report. 	
4	AP	Mr. Yuvraj Damugade	<p>October 2019 to December 2019</p> <ul style="list-style-type: none"> • Involved in detailed study of mass balance w.r.t. raw materials & products especially from view point of process emissions. • Site visit and finalization sampling locations. • Planning & identifying the most appropriate air pollution control equipment from view points of efficiencies, capital as well as O & M cost & suitability. • Identification of impact and suggesting the mitigation measures. 	
5	AQ		<p>October 2019 to December 2019</p> <ul style="list-style-type: none"> • Designing of Ambient AQM network for use in prediction modeling and micro metrological data development. • Development and application of air quality models in prediction of pollutant dispersion. • Plotting of isopleths of GLCs, Worst case scenarios prediction w.r.t. source and receptors. 	


Sr. No.	Functional Area	Name of the expert/s	Involvement (Period & Task)	Signature
6	HG	Dr. J.B. Pishte	<p>October 2019 to December 2019</p> <ul style="list-style-type: none"> Hydro geological studies, data processing; analysis and evaluation, Ground water table measurement and monitoring network methodology preparation. Planning and scheduling of groundwater sampling stations in the region. Study of geology & general geological configuration of the region as well as sub-surface geology. Determination of impact and suggesting mitigation measures. 	
7	GEO			
8	RH	Mr. Vinod Sahasrabudhe	<p>October 2019 to December 2019</p> <ul style="list-style-type: none"> All the necessary literature for processes storage of hazardous chemicals was studied before visit. Site visit and Verification of adequacy of on-site emergency preparedness plan for proposed unit was done. Identification of probable emergencies and procedures for preparedness for handling the same was verified. Worst case analysis by using ALOHA, Ware house safety measures, suggestion of mitigation measures. 	
9	NV	Mr. Vinay Kumar Kurakula	<p>October 2019 to December 2019</p> <ul style="list-style-type: none"> Verification of noise levels Monitoring (both work zone and ambient) in the industrial premises and study region Finalization and verification of sampling locations, ambient noise monitoring stations and the data collected. 	
10	LU		<ul style="list-style-type: none"> Land use land cover mapping using NRSC Satellite image. Satellite image processing, Image classification, Technical analysis and study for setting up of facility, planning of storage facility. 	
11	SHW		<ul style="list-style-type: none"> Detailed study of manufacturing process and mass balance. Solid wastes generation in different steps of manufacturing was identified and their quantification done was checked. Identification of various hazardous wastes generated through manufacturing process. 	

Sr. No.	Functional Area	Name of the expert/s	Involvement (Period & Task)	Signature
			<ul style="list-style-type: none"> Practices of storage and disposal of HW its impact and mitigation measures. 	
12	SC	Mr. B. S. Lole	<p>October 2019 to December 2019</p> <ul style="list-style-type: none"> Involvement physical analysis & characterization of the soils. Identification of Impact and its mitigation measures. Interpretation of soil analysis, results and data including comparison of same with standard soil classification. Collection, study and evaluation of soil information from data obtained from secondary sources & its interpretation. 	

Declaration by the Head of the Accredited Consultant Organization/authorized person:

I, **M/s. Equinox Environments (I) Pvt. Ltd. (EEIPL); Kolhapur, Environmental & Civil Engineers, Consultants and Analysts.**, hereby confirm that the above mentioned experts were involved in preparation of Draft EIA and Executive Summary in respect of establishment of 45 KLPD molasses/cane juice based distillery by **Mukteshwar Sugar Mills Ltd. (MSML)**, located at Gat No.190, 191,192, 194, 195, 196, 197, 198, Dhamori (BK), Tal.: Gangapur, Dist.: Aurangabad, in Maharashtra State.

I also confirm that the consultant organization shall be fully accountable for any mis-leading information mentioned in this statement.

Signature: 

Name: Dr. Sangram Ghugare

Designation: Chairman & MD

Name of the EIA Consultant Organization: M/s. Equinox Environments (I) Pvt. Ltd. (EEIPL); Kolhapur.

NABET Certificate No. & Issue Date: NABET/EIA/1821/ RA 0135 dated 02.06.2019

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**Summary of EIA Report For
Establishment of 45 KLPD Molasses/Cane Juice Based Distillery
By
Mukteshwar Sugar Mills Ltd. (MSML)**

Gat No.190, 191,192, 194,195,196, 197, 198, Dhamori (BK), Tal. Gangapur, Dist.
Aurangabad, in Maharashtra State.

1) The Project

Mukteshwar Sugar Mills Ltd. (MSML) is located at Gat No.190, 191,192, 194,195,196, 197, 198, Dhamori (BK), Tal. Gangapur, Dist. Aurangabad, in Maharashtra State. They have planned to establish 45 KLPD molasses/Cane Juice based Distillery unit in the existing 2,500 TCD Sugar Factory.

As per the provisions of “EIA Notification No. S.O. 1533 (E)” dated 14.09.2006; and amended EIA Notification dated 13.06.2019 (Notification No. S.O. 1960 (E)) thereto issued by the MoEFCC; New Delhi. Accordingly, proposed distillery project is listed as activity **5(g)-Distillery; Category ‘B’**. But, in absence of SEAC/ SEIAA committee, an application in Form I format was submitted to MoEFCC; New Delhi & granted standard ToRs on 30.04.2020.

Proposed distillery project will be formulated in such a fashion and manner so that the utmost care of Safety Norms and Environment Protection shall be taken. Details of capital investment are given in table 1.

Table 1 Project Investment Details

No.	Industrial unit	Capital Investment (Rs. Cr.)	
		Existing	Proposed
1	Sugar Factory	Rs. 61.08 Cr.	--
2	Distillery Unit	--	Rs. 41.77 Cr.
	Total	Rs. 102.85 Cr.	

2) The Place

Proposed project will be implemented in the existing premises of MSML. Total land acquired by the industry is 2,40,000 Sq. M. (24.0 Ha). Total built up area under existing sugar factory & proposed distillery unit is 61,269.05 Sq. M. Detailed area break-up is presented at Table 2.

Table 2 Area Break up

No.	Description	Area (Sq. M.)
A	Built-up Area	
	i. Existing Sugar Factory	11,371.82
	ii. Area under colony, Parking & other amenities	29,003.23
	iii. Proposed Distillery Unit	20,894.0
	Total	61,269.05
B	Area Under Roads	
	i. Existing	23,736.98
	ii. Proposed	1128.71
	Total	24,865.69
C	Green belt area (Norm: 33% of Total Plot)	
	i. Existing Green Belt (17.7% of Total Plot)	42,444.54
	ii. Proposed Green Belt (15.3% of Total Plot)	36,842.3

No.	Description	Area (Sq. M.)
	Total	78,286.84
D	Open Area	75,578.42
E	Total Plot Area(A+B+C+D)	2,40,000.0

3) The Promoters

MSML promoters are well experienced in the field of sugar factory & distillery unit & have made thorough study of entire project planning as well as implementation schedule. Name and designation of the promoters are as under-

Table 3 List of Promoters

No.	Name	Designation
1.	Mrs. Asha B. Nikam	Chairman
2.	Mrs. Maithilli S. Nikam	Director
3.	Mrs. Shriya D. Nikam	Director
4.	Mrs. Lata M. Sharma	Director

4) The Products

The details of products as well as by-products in existing sugar & proposed molasses/cane juice based distillery activities has been presented in table below.

Table 4 Product & By-product for Integrated Complex

Industrial Unit	Product & By-product	Unit	Quantity
^sExisting Sugar Factory (2500 TCD)	Sugar(11%)*	MT/D	275
	By-Product		
	Bagasse (29%)*	MT/D	725
	Press Mud (4%)*	MT/D	100
	Molasses (4%)*	MT/D	100
Proposed Distillery Unit (45 KLPD)	Products		
	Rectified Spirit (RS)/Extra Neutral Alcohol (ENA)/Ethanol	KLPD	45
	By-Product		
	Fusel Oil	MT/D	0.09
	CO ₂	MT/D	34
	Compost	MT/D	36

NOTE- \$: Values as per valid CTO, *: Percent of Cane Crushed.

5) THE PURPOSE

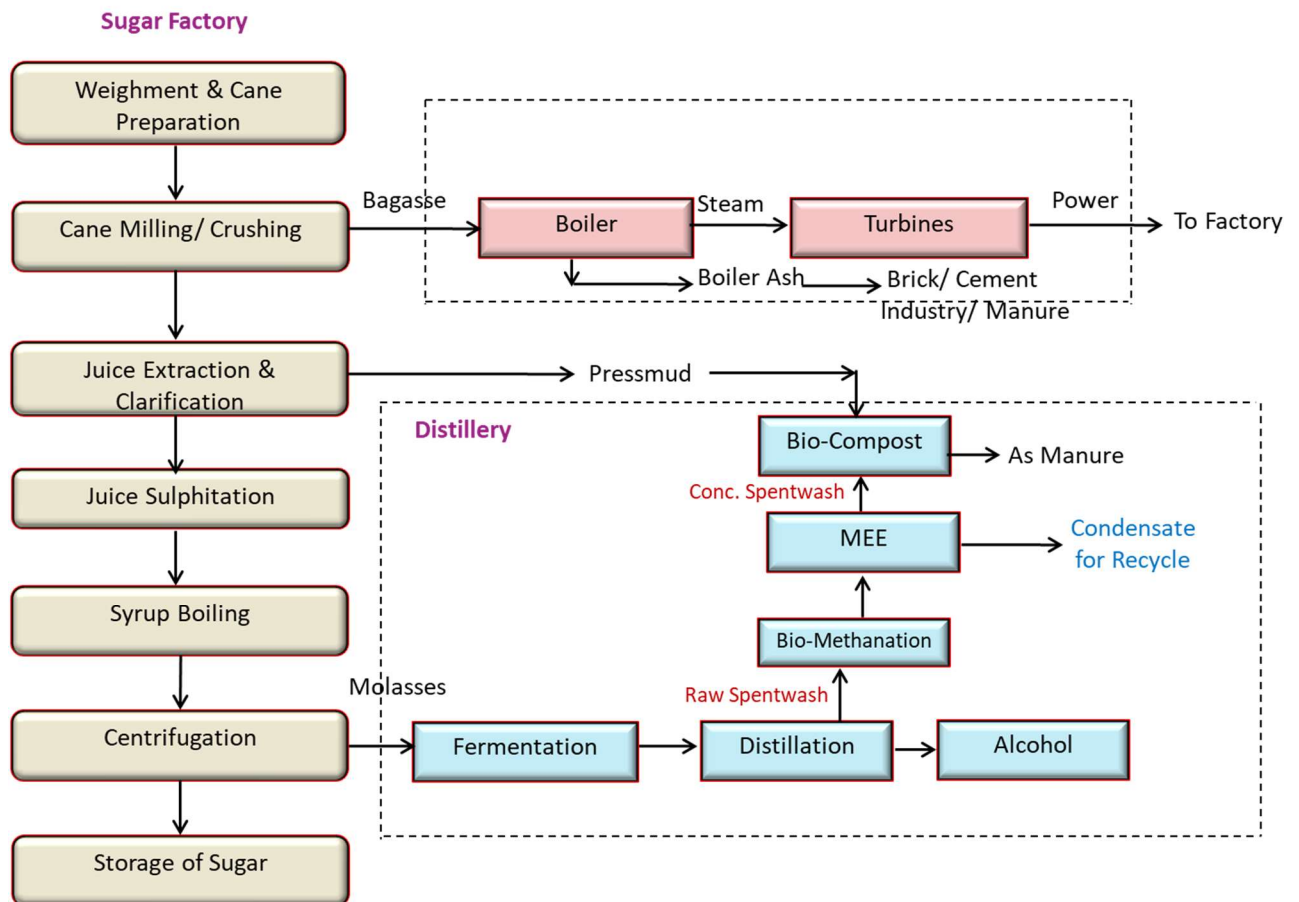
Sugarcane potential, agro-climatic conditions, cost of conversion & overheads etc are the major deciding factors for fixing the crushing capacity of sugar factory. Today, sugar factories cannot survive in healthy condition on a single product i.e. sugar. Thus, it is essential to develop sugar factory into an affiliated complex so as to utilize the valuable by-products more profitably. Bagasse based cogeneration of steam and electricity has been practiced since long time in sugar mills. Molasses is also another important by-product of the sugar industry. Alcohol has assumed very important place in the Country's economy. It is a vital raw material for a number of chemicals and also a renewable source of energy. It has been a source of a large amount of revenue by way of excise duty levied by the Govt. on alcoholic liquors. It has a potential as fuel in the form of power alcohol for blending with petrol. Also, the fermentation alcohol has great demand in countries like Japan, U.S.A., Canada, Sri Lanka etc., as the synthetic alcohol produced by these countries, from naphtha of

petroleum crude, is not useful for beverages. Considering the above facts as well as availability of raw material, management of MSML decided for establishment of distillery.

6) MANUFACTURING PROCESS

Detailed manufacturing process and flow diagram for sugar factory & distillery unit are given in Chapter 2 of EIA report. Manufacturing process of integrated project complex is presented at Figure 1.

Figure 1 Integrated Manufacturing Process Operations



7) ENVIRONMENTAL ASPECTS

MSML has implemented an effective 'Environmental Management Plan' and various aspects of the same are as follows: -

A) Water Use and Effluent Generation

a. Water Use

Total water requirement for existing sugar factory will be 955 M³/D (As per consent 390 M³/D- fresh water). Out of total water requirement, 866 M³/Day will be Cane Condensate, 51 M³/Day will be treated water from ETP & 38 M³/Day will be fresh water taken from Jayakwadi dam.

Total water required for proposed distillery unit during crushing season will be 514 M³/Day. Out of total water requirement, 366 M³/Day will be treated water from CPU, 116 M³/Day will be Cane Condensate, 20 M³/Day will be treated water from ETP & 12 M³/Day will be the fresh water taken from Jayakwadi dam.

Total water required for proposed distillery unit during non-crushing season will be 514 M³/Day. Out of total water requirement, 366 M³/Day will be treated water from CPU & 148 M³/Day will be the fresh water taken from Jayakwadi dam.

Details of water usage in sugar factory & distillery unit is presented in Table 5 & 6.

Table 5 Details of Water Consumption in Existing Sugar Factory

No.	Description	Water Consumption (M ³ /Day)	
		Existing Sugar	Existing Sugar – As per consent
1	Domestic	#12	#20
2	Industrial		
a)	Process	*660	#350
b)	Cooling Make up	*82	#20
c)	Boiler Make up	*120	
d)	Lab & Washing	*3	--
e)	DM Plant	#26	--
f)	Ash quenching	*1	--
	Industrial Total	892 (*866+#26)	#370
	Recycle	97%	--
3	Green Belt	Ω51	--
	Grand Total	955 (*866+#38+Ω51)	#390
	Fresh Water Consumption (Norm: 100 Lit / MT of Cane Crushed)	10.4 Lit.	148 Lit.

Note : # Fresh water from Jayakwadi dam * Sugarcane condensate
Ω Treated water from ETP

Table 6 Details of Water Consumption in Proposed Molasses Distillery Unit (During Sugarcane Crushing & Non- Crushing Season Days)

No.	Description	Water Consumption (M ³ /Day)	
		Crushing Season (150 Days)	Non-Crushing Season (120 Days)
1	Domestic	#2	#2
2	Industrial		
a)	Process	*357	*357
b)	Cooling Make up	78 (*69+*9)	78(#69+*9)
c)	Boiler Make up	*43	#43
d)	Lab & Washing	*3	#3
e)	DM Plant	#10	#10
f)	Ash quenching	*1	#1
	Industrial Total	492(*366+*116+#10)	492(*366+#126)
	Recycle	98% Recycle	74% Recycle
3	Greenbelt	Ω20	#20
	Grand Total	514 (*366+*116+#12+Ω20)	514 (*366+#148)
	Fresh Water Consumption (Norm: 10 KL/KL of Alcohol)	0.2 KL	2.8 KL

Note : # Fresh water from Jayakwadi dam * Sugarcane condensate
Ω Treated water from ETP ♣ Treated Water from Distillery CPU

**Table 7 Details of Water Consumption in Proposed Cane Juice Distillery Unit
(During Sugarcane Crushing Season – 150 Days)**

No.	Description	Water Consumption (M ³ /Day)
1	Domestic	#2
2	Industrial	
a)	Cooling Make up	*78
b)	Boiler Make up	*43
c)	Lab & Washing	*3
d)	DM Plant	#10
e)	Ash quenching	*1
	Industrial Total	135(*125+#10)
	Recycle	98% Recycle
3	Greenbelt	Ω20
	Grand Total	157 (*125+#12+ Ω20)
	Fresh Water Consumption (Norm: 10 KL/KL of Alcohol)	0.2 KL

Note : # Fresh water from Jayakwadi dam * Sugarcane condensate
Ω Treated water from ETP

b. Effluent Treatment-

i) Domestic Effluent

Domestic effluent from existing sugar factory is 10M³/D, same is being treated separately in proposed STP. After implementation of distillery unit, total domestic effluent from MSML campus will be 11.5 M³/D (Domestic effluent from sugar factory – 10 M³/D & distillery 1.5 M³/D). Same will be treated in proposed Sewage Treatment Plant (STP) of capacity 20M³/D and treated effluent will be reused for flushing and also used for gardening.

ii) Industrial effluent

Total trade effluent generated from existing sugar activities is 142 M³/D (As per consent 240 M³/D). Same is treated in existing Effluent Treatment Plant (ETP) provided in own factory premises having capacity 300 M³/D comprising of primary & secondary unit operations.

From proposed molasses distillery unit, raw spentwash about 360 M³/D will be generated. Here, spentwash will be primarily treated in bio-methanation plant followed by concentration in MEE. Concentrated spentwash @ 75 M³/D will be forwarded for composting. Refer **Appendix- F** for mass balance for composting. Other effluents viz. spent lees @ 63 M³/D, MEE condensate @ 281 M³/D, cooling & boiler blow down @ 17 M³/D and lab-wash & DM backwash @ 13 M³/D will be treated in proposed CPU. Treated water from CPU will be reused for industrial operations, thereby achieving Zero Liquid Discharge (ZLD) for process effluent.

Table 8 Effluent Generation from Existing Sugar Factory

Description	Effluent Generation		Disposal
	Sugar Factory (M ³ /Day)	Sugar Factory (M ³ /Day) – As per consent	
1. Domestic	10	16	Treated in proposed STP
2. Industrial			
a)Process	80	240	Treated in existing ETP having primary & secondary treatment units; used for green belt & gardening
b)Cooling	8		
c)Boiler	25		
d)DM Plant	26		
e)Lab & Washing	3		
Industrial Total (a+b+c+d+e)	142	240	

Table 9 Effluent Generation from Distillery Unit

Description	Quantity (M ³ /D)		Disposal
	Molasses Distillery	Cane Juice Distillery	
1. Domestic	1.5	1.5	Treated in proposed STP
2. Industrial			
a)Process	Raw Spent wash – 360	Raw Spent wash – 180	Raw spentwash shall be primarily treated in Bio-methanation plant followed by concentration in Multi Effect Evaporator (MEE). Conc. Spentwash shall be forwarded for bio-composting alongwith pressmud.
	Conc. Spentwash – 75	Conc. Spentwash – 30	
	MEE Condensate -281	MEE Condensate - 146	
	Spent lees – 63	Spent lees – 37	
b)Cooling Blow down	8	8	Other effluents viz. MEE condensate, spent lees, cooling b/d, boiler b/d, lab & washing effluent shall be forwarded to Distillery CPU. Treated effluent shall be fully recycled in process to achieve Zero Liquid Discharge (ZLD) for process effluent.
c)Boiler Blow down	9	9	
d)Lab; Washing	3	3	
e)DM back wash	10	10	
Total	Conc. Spent wash–75	Conc. Spent wash-30	
	Other effluent – 374	Other effluent – 213	

Figure 2 - Flow Chart of Existing Sugar Factory ETP

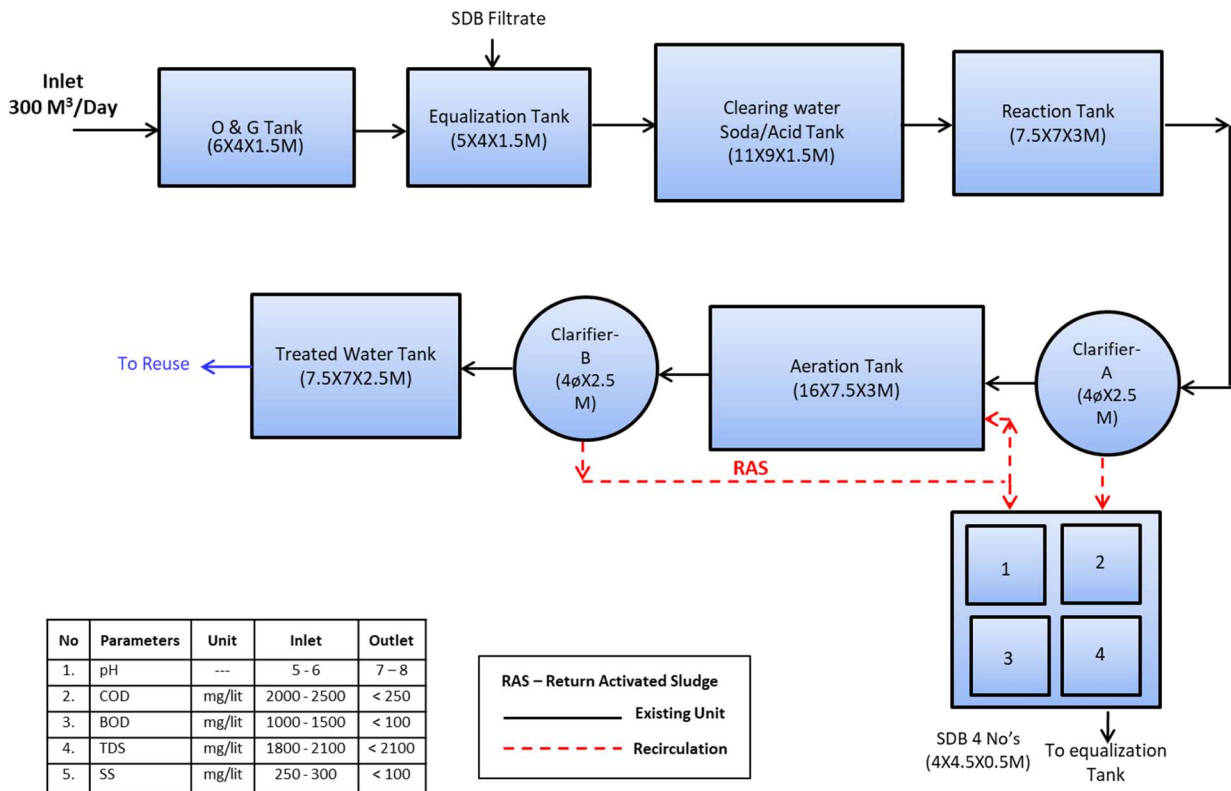


Figure 3 Process Flow Diagram of Proposed CPU

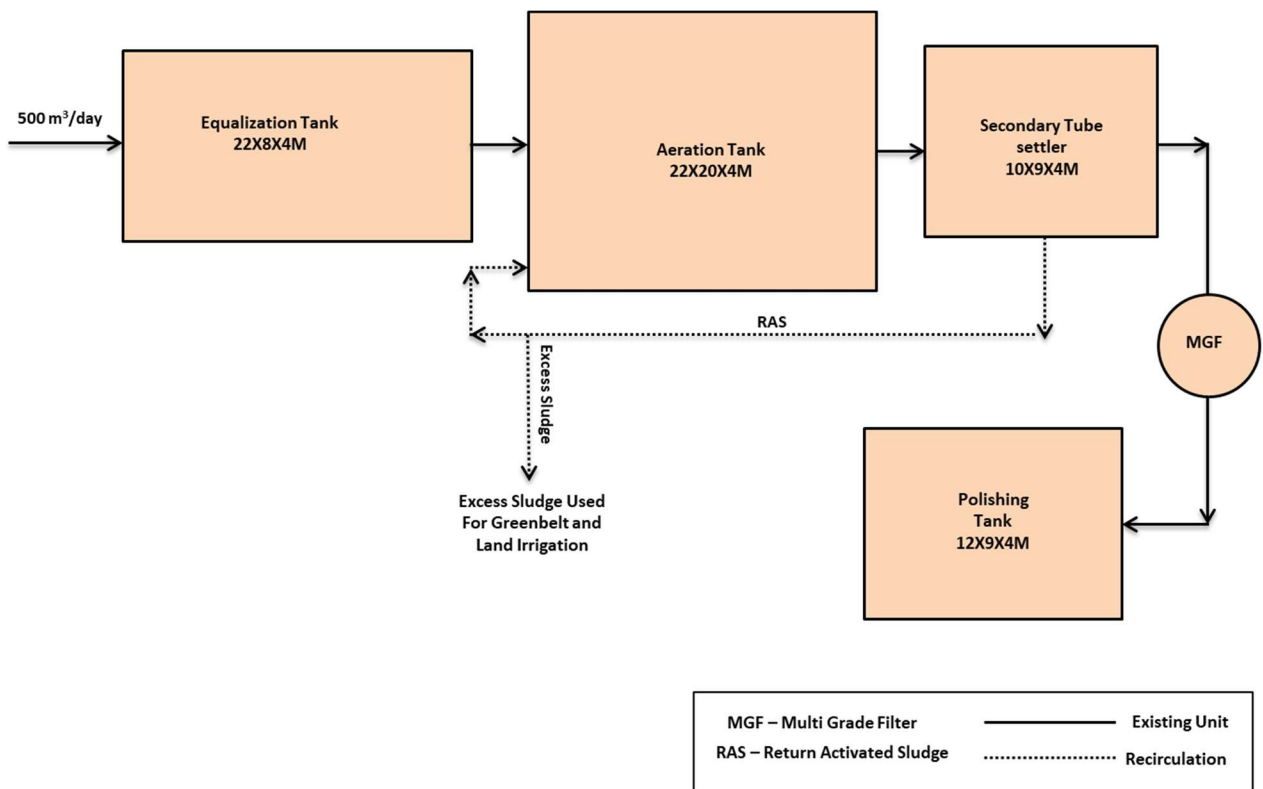


Figure 4 Process Flow Diagram of Proposed CPU for Distillery

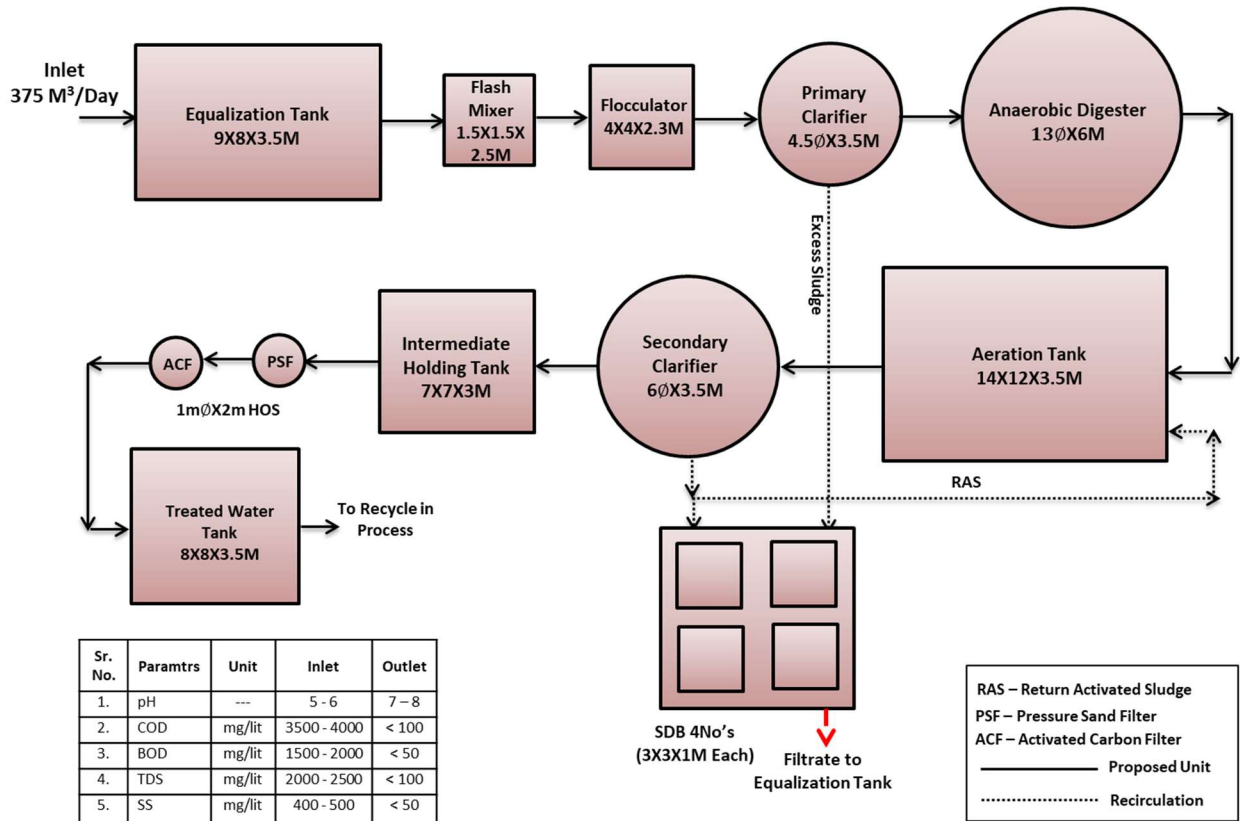
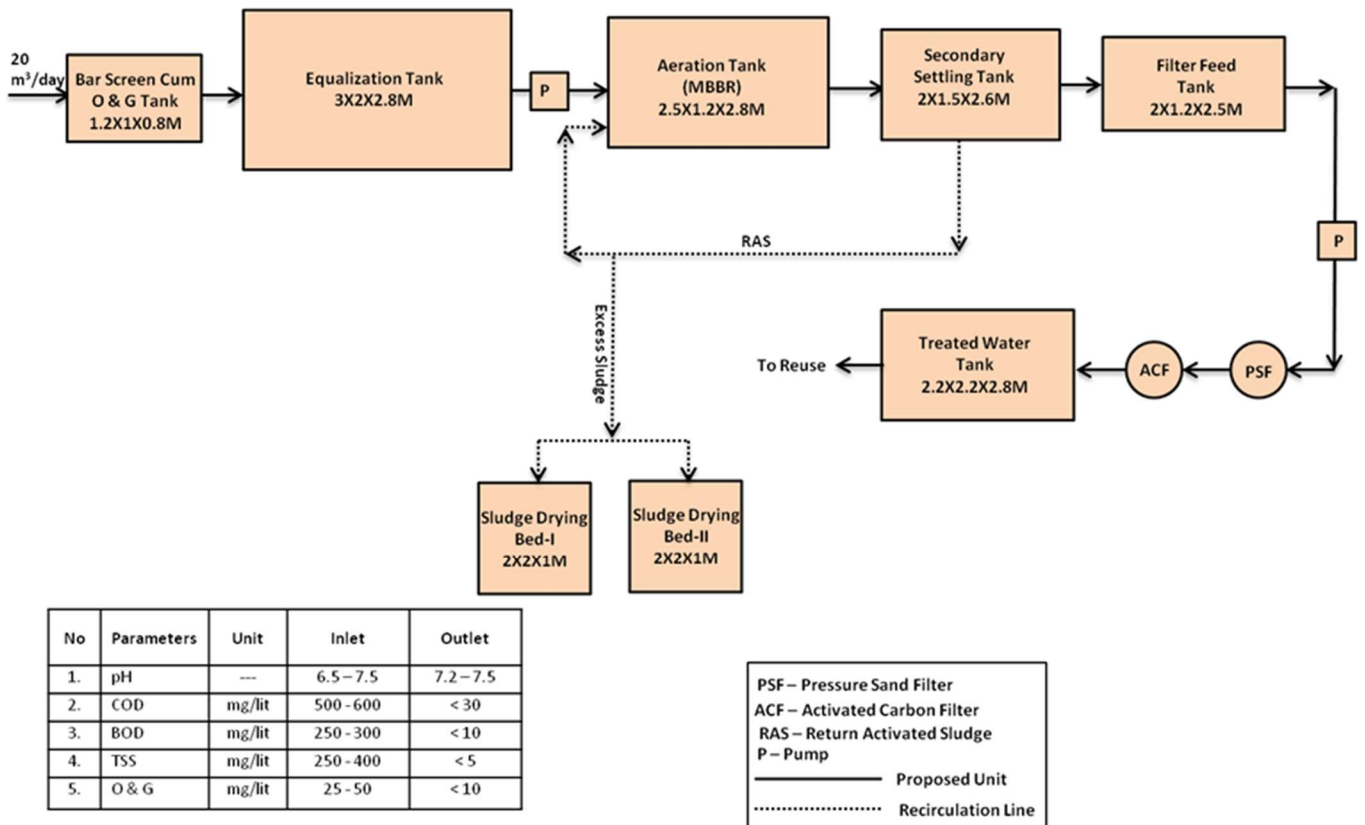


Figure 5 Flow Chart of Proposed STP



B) Air Emissions

Presently, steam required for existing sugar activities is taken from boiler of 48 TPH capacity. Bagasse to the tune of 478 MT/D alongwith Biogas 825 Nm³/Hr is used as fuel. Wet Scrubber is provided as APC.

A 10 TPH boiler will be installed under proposed 45 KLPD distillery unit. Bagasse to the tune of 105 MT/D will be used as fuel. Wet Scrubber will be provided as APC.

Steam required for the proposed distillery activities will be taken from existing 48 TPH boiler of sugar factory as well as from new 10 TPH boiler. A common stack of 65 M height will be provided for existing & proposed boiler.

There will be process emissions in the form CO₂ from Fermenters in distillery unit to the tune of 34 MT/D. Same will be collected, purified, compressed and filled in cylinders and sold for production of beverages. Details of Boilers are presented at table 10.

Table 10 Details of Boiler and Stack in MSML

No.	Description	Boilers		DG Set
		Existing (Sugar Factory)	Proposed (Distillery)	Existing
1	Capacity	48 TPH	10 TPH	500 KVA
2	Fuel type	Bagasse & Biogas	Bagasse	Diesel
3	Fuel Qty.	478 MT/D & 825 M ³ /Hr	105 MT/D	90 Lit./Hr.
4	MOC	R.C.C	R.C.C	MS
5	Shape	Round	Round	Round
6	Height	65 M		5 M (ARL)
7	Diameter	2.5 M	2.5 M	150 mm
8	APC Equipment	Wet Scrubber	Wet Scrubber	--

A) Noise Pollution Aspect

i. Sources of Noise

1. In the distillery, very high noise generating sources would not exist. Expected noise levels in the section would be about 70 dB (A) or so. Adequate noise abatement measures like silencer & maintenance of pumps, motors, and compressors would be carried out and enclosures would be provided to abate noise levels at source. Moreover, enclosures to the machinery would be provided wherever possible.
2. Fermentation section & distillation section would be the other minor noise generating sources. The expected noise levels in these sections would be in range of 70 to 80 dB(A).
3. Existing sugar factory and co-gen; noise-generating sources are the boiler house, turbine rooms, cane crushing section and mill house, etc.
4. Adequate green would be developed in phase wise manner in and around the industry. So that it would further attenuate the noise levels.

ii. Control Measures

Isolation, separation and insulation techniques to be followed, PPEs in the form of earmuffs, earplugs etc. would be provided to workers. D.G. Sets are enclosed in a separate canopy to reduce the noise levels.

B) Hazardous Wastes

Different types of hazardous wastes being generated from proposed unit alongwith disposal methods are presented in Table 11.

Table 11 Hazardous Solid Waste Generation & Disposal

No.	Industrial Unit	Category	Quantity	Disposal
1	Sugar Factory & Distillery Unit	Spent Oil – Cat.5.1	1.6 MT/Yr.	Reuse in own boiler as fuel
		Empty Containers –33.1	20 Nos. /Yr.	Authorized re-seller

C) Solid Wastes**Table 12 Details of Solid Waste**

No.	Unit	Type	Quantity (MT/D)	Disposal
1	Sugar Factory (Existing)	ETP Sludge	0.3	Used as Manure
		Boiler Ash (Bagasse)	14	Bricks / cement manufacturers / manure
2	Distillery Unit (Proposed)	Boiler Ash (Bagasse)	3	Bricks / cement manufacturers / manure
		Yeast Sludge	8	Used as filler material for composting/ manure
		CPU Sludge	0.6	

Agreement with brick manufacturers will be done after commissioning of distillery unit.

C) Odour Pollution

There are number of odour sources such as molasses handling and storage, fermentation and distillation, secondary effluent treatment, and storage of effluents, stale cane, bad mill sanitation, bacterial growth in interconnecting pipes & unattended drains. Measures adopted under existing unit for controlling same are proper housekeeping, sludge management in biological ETP units, steaming of major pipe lines, regular use of bleaching powder in the drains, efficient handling, prompt & proper disposal of press mud. Under proposed project of distillery, spentwash shall be carried through closed pipeline for spentwash storage and handling activity shall be entirely eliminated.

D) Compliance with the Norms

All the relevant acts, rules and guidelines with respect to effluent treatment and disposal, solid & hazardous wastes handling and disposal as well as in respect of emission handling and disposal, wherever applicable, as specified by the Maharashtra Pollution Control Board (MPCB) or any other concerned authority are strictly followed in the existing set up. Same practice shall be continued after proposed establishment.

E) Environmental Management Cell

EMC will be proposed by MSML, functioning under its sugar & distillery unit. Members of EMC will be well qualified and experienced in their concerned fields. EMC is as under-

Table 13 Environmental Management Cell of MSML

No.	Designation	Number (s)
1.	Managing director	1
2.	Chief Executive Officer	1
3.	Production Manager	1
4.	Environmental Officer	1
5.	Safety Officer	1
6.	Chief Chemist	1
	Total	06

Details of capital as well as O & M costs towards environmental aspects under the existing sugar setup & proposed distillery are as follows –

Table 14 Capital as well as O & M Cost under Existing & Proposed Unit

No.	Description	Cost Component (Rs. Lakhs)	
		Capital	O & M / Year
A	Existing		
1	APC Equipments – Wet Scrubber, Stack (65 M) for boiler of 48 TPH & Ash Collection System	200.0	50.0
2	Water Pollution Control - ETP & CPU (Prop.)	250.0	30.0
3	Noise Pollution Control	10.0	2.0
4	Solid Waste Management	10.0	2.0
5	Occupational Health and Safety	20.0	2.0
6	Green Belt Development	40.0	5.0
7	Environmental Monitoring & Management	15.0	2.0
	Total (9% of Capital Investment of Rs. 61.08 Cr.)	545.0	93.0
B	Proposed		
1	APC Equipment – Wet Scrubber	100.0	30.0
2	Water Pollution Control – CPU & Bio-methanation plant, MEE	250.0	50.0
3	Noise Pollution Control	10.0	2.0
4	Occupational Health & Safety	30.0	5.0
5	Green Belt Augmentation Plan & Rain Water Harvesting implementation	70.0	12.0
6	Environmental Monitoring & Management	20.0	5.0
	Total (11.4% of Capital Investment of Rs. 41.77 Cr.)	480.0	104.0

F) Rainwater Harvesting Aspect

- Total area of Plot - 2,40,000 Sq. M.
- Total Open Space – 75,578.42 Sq. M.
- Average annual rainfall in the area= 741 mm

A Roof Top Harvesting-

$$\begin{aligned} \text{RWH Quantity} &= 10,364.88 \text{ M}^2 \times 0.74 \text{ M} \times 0.8 \\ &= \mathbf{6136.0 \text{ M}^3} \end{aligned}$$

B Surface Water Harvesting –

$$\begin{aligned} \text{1. RWH Quantity from Green Belt} &= 78,286.84 \text{ M}^2 \times 0.74 \text{ M} \times 0.3 \\ &= 17,379.6 \text{ M}^3 \end{aligned}$$

$$\begin{aligned} \text{2. RWH Quantity from Roads} &= 24,865.69 \text{ M}^2 \times 0.74 \text{ M} \times 0.5 \\ &= 9,200.3 \text{ M}^3 \end{aligned}$$

$$\begin{aligned} \text{3. RWH Quantity from Open Space} &= 75,578.42 \text{ M}^2 \times 0.74 \text{ M} \times 0.3 \\ &= 16,778.4 \text{ M}^3 \end{aligned}$$

$$\begin{aligned} \text{Total RWH from Surface Area} &= 17,379.6 \text{ M}^3 + 9,200.3 \text{ M}^3 + 16,778.4 \text{ M}^3 \\ &= \mathbf{43,358.3 \text{ M}^3} \end{aligned}$$

Hence, the total water becoming available after rooftop and land harvesting will be

Rooftop Harvesting	+	Surface Harvesting	=	Total RWH
6,136.0	+	43,358.3	=	49,494.3 M³
			=	49.4 ML

J) The Green Belt

Table 15 Area Details

No.	Description	Area (Sq. M.)
A	Built-up Area	
	iv. Existing Sugar Factory	11,371.82
	v. Area under colony, Parking & other amenities	29,003.23
	vi. Proposed Distillery Unit	20,894.0
	Total	61,269.05
B	Area Under Roads	
	iii. Existing	23,736.98
	iv. Proposed	1128.71
	Total	24,865.69
C	Green belt area (Norm: 33% of Total Plot)	
	iii. Existing Green Belt (17.7% of Total Plot)	42,444.54
	iv. Proposed Green Belt (15.3% of Total Plot)	36,842.3
	Total	78,286.84
D	Open Area	75,578.42
E	Total Plot Area(A+B+C+D)	2,40,000.0

The Criteria for Proposed Greenbelt Development Plan

Emission of SPM, SO₂ is the main criteria for consideration of green belt development. Plantation under green belt is provided to abate effects of the above emissions. Moreover, there would also be control on noise from the industry to surrounding localities, as considerable attenuation would occur due to the barrier of trees provided in the green belt.

K) Socio-Economic Development

Socio economic study was carried out in 38 villages within 10 Km radius of the study area was carried out with the help of a structured close-ended interview schedule, comprising of 30 questions in Marathi. The schedule was administered by using Simple Random Disproportionate Sampling Technique. Refer Socio – economic profile in Chapter 3, Section 3.12 of EIA report for detailed information of socio economic aspect. Observations and conclusions after the socio-economic study are as follows-

- Most of the villages have basic facilities like drinking water, preliminary educational infrastructure, toilets and electricity. Good transportation & satisfactory educational facilities are present.
- A majority of the population within the sample size had a good income which is mostly due to sugarcane cultivation.
- Indirect & direct Job opportunities provided to locals by industry.
- Most villages lacked drainage system, open drainages; scattered solid waste as well as poor sanitation was visible.
- Improper, inadequate and not within close vicinity health facilities is the major problem faced by locals.

8) ENVIRONMENTAL MONITORING PROGRAMME

Reconnaissance survey of the study area was undertaken in the month of December 2018. Field monitoring for measuring meteorological conditions, ambient air quality, water quality, soil quality and noise levels was initiated in October 2019. Report incorporates data monitored during the period from October 2019 to December 2019 and secondary data collected from various sources, which include Government Departments, related to ground water, soil, agriculture, forest etc.

a. Land Use

Land use study requires data regarding topography, zoning, settlement, industry, forest, roads & traffic etc. The collection of this data was done from various secondary sources viz, Census books, Revenue records, State and Central Government Offices, Survey of India Toposheets as well as high resolution satellite image and through primary field surveys.

b. Land Use/ Land Cover Categories of Study Area

Table 16 Land Use/ Land Cover

No.	Class	Area (Ha)	Percentage (%)
1	Built Up Area	743	2.37
2	Crop Land	54	0.17
3	Fallow Land	16712	53.20
4	Water Bodies	7627	24.28
5	Nadi/ Canal	2314	7.37
6	Forest Area	1023	3.26
7	Open Scurb Land	2942	9.36
	Total	31415	100

c. Meteorology

Methodology adopted for monitoring surface observations is as per the norms laid down by Bureau of Indian Standards (BIS) and the India Meteorology Department (IMD). On-site monitoring was undertaken for various meteorological variables in order to generate the data. Further, certain secondary meteorological data like temperatures, relative humidity, rainfall intensity etc. have been taken from IMD, Satara.

Meteorological parameters were monitored during the period October 2019 to December 2019. Details of parameters monitored, equipments used and the frequency of monitoring have been given in Chapter 3 of the Draft EIA report.

d. Air Quality

This section describes selection of sampling locations, includes methodology of sampling and analytical techniques with frequency of sampling. Presentation of results for October 2019 to December 2019 survey is followed by observations. All the requisite monitoring assignments, sampling and analysis was conducted through the laboratory - M/s. Green Envirosafe Engineers & Consultant Private Limited, Pune. Lab has received NABL accreditation and has been approved by MoEFCC; New Delhi. Further, it has also received ISO 9001:2008, ISO 14001:2004OHSAS 18001–2007 certifications by DNV. Ambient air monitoring was conducted in the study area to assess the quality of air for PM₁₀, PM_{2.5}, SO₂, NO_x and CO. The various monitoring stations selected are shown in following table.

Table 17 Ambient Air Quality Monitoring (AAQM) Locations

AAQM Station Code	Name of the Station	Distance from Site (km)	Direction w.r.t. Site
A1	Industrial Site	--	--
A2	Dhamori Bk.	1.68	E
A3	Ranjangaon Khuri	5.40	E
A4	Kodapur Jhanjadi	3.45	SW
A5	Malwadi	2.13	NW
A6	Antapur	3.49	N
A7	Harsuli	3.63	S
A8	Bhagatwadi	1.34	SW

**Table 18 Summary of the AAQ Levels for Monitoring Season
[October 2019 to December 2019]**

Parameter		Location							
		Industrial Site	Dhamori Bk.	Ranjangaon Khuri	Kodapur Jhanjadi	Malwadi	Antapur	Harsuli	Bhagatwadi
PM ₁₀ (µg/M ³)	Max.	62.50	57.40	57.80	57.60	57.80	56.80	57.30	57.90
	Min.	55.30	49.70	48.50	47.60	48.90	49.10	49.10	48.90
	Avg.	59.19	54.08	53.36	53.48	54.54	54.17	54.09	54.25
	98%	62.09	57.22	57.76	57.42	57.62	56.62	57.11	57.72
PM _{2.5} (µg/M ³)	Max.	22.30	20.10	18.90	19.70	19.70	19.50	19.70	23.90
	Min.	17.40	14.80	15.40	14.30	14.20	14.10	14.10	13.00
	Avg.	19.77	17.73	17.25	17.43	17.29	17.65	17.59	17.43
	98%	21.93	19.96	18.68	19.65	19.65	19.45	19.59	23.81
SO ₂ (µg/M ³)	Max.	22.50	20.20	18.60	19.20	18.60	18.50	18.60	20.30
	Min.	18.10	14.60	15.30	14.40	14.40	14.40	14.70	14.50
	Avg.	20.50	17.40	16.83	16.63	16.61	16.53	16.57	16.96
	98%	22.36	20.06	18.56	18.98	18.55	18.50	18.60	20.12
NO _x (µg/M ³)	Max.	31.80	24.40	22.80	23.80	22.50	24.70	23.10	24.80
	Min.	26.30	19.20	18.70	18.20	18.50	18.20	18.50	16.80
	Avg.	28.95	21.45	21.02	20.94	20.52	21.77	21.20	21.63
	98%	31.66	23.85	22.76	23.66	22.45	24.65	23.02	24.57
CO (mg/m ³)	Max.	0.90	0.06	0.07	0.07	0.08	0.07	0.07	0.06
	Min.	0.20	0.01	0.02	0.01	0.01	0.01	0.02	0.02
	Avg.	0.46	0.03	0.04	0.04	0.04	0.04	0.04	0.04
	98%	0.81	0.06	0.07	0.07	0.07	0.07	0.07	0.06

Note: 1. PM₁₀, PM_{2.5}, SO₂ and NO_x are computed based on 24 hourly values. 2.CO is computed based on 8 hourly values.

**Table 19 National Ambient Air Quality Standards (NAAQS) by CPCB
(Notification No. S.O.B-29016/20/90/PCI-L by MOEFCC; New Delhi dated 18.11.2009)**

Zone Station	PM ₁₀ µg/M ³		PM _{2.5} µg/M ³		SO ₂ µg/M ³		NO _x µg/M ³		CO mg/M ³	
	24 Hr	A.A.	24 Hr	A.A.	24 Hr	A.A.	24 Hr	A.A.	8 Hr	1 Hr
Industrial, Rural & Residential Area	100	60	60	40	80	50	80	40	4	4
Eco-sensitive Area Notified by Govt.	100	60	60	40	80	20	80	30	4	4

Note: A.A. represents Annual Average

e. Water Quality

Sampling and analysis of water samples for physical, chemical and heavy metals were also undertaken through the laboratory of Green Enviro Safe Engineers & Consultant Pvt. Ltd, Pune. Eight locations for surface water and Eight locations for ground water were selected. Same are listed below

Table 20 Monitoring Locations for Ground Water

Station	Geographical Locations	Distance from Site (Km)	Direction from Site
GW1	19°41'49.02"N 75°10'41.60"E	0.38	SSW
GW2	19°41'52.17"N 75°10'48.58"E	0.30	SSE
GW3	19°41'30.99"N 75°11'32.44"E	1.72	SE
GW4	19°42'17.63"N 75°11'38.24"E	1.65	NE
GW5	19°42'38.04"N 75°11'5.25"E	1.25	NE
GW6	19°42'40.49"N 75°9'50.22"E	1.94	NW
GW7	19°41'44.89"N 75°10'6.75"E	1.22	SW
GW8	19°41'8.63"N, 75°10'37.68"E	1.71	SSW

Table 21 Monitoring Locations for Surface Water

Station	Station Location	Distance (Km)	Direction	Justification
SW1	Tembhapuri	4.64	NNE	West of south west side tank near the project site
SW2	Pimparkheda	5.73	NE	North west side stream of the project site
SW 3	Dhamori BK	2.87	NE	North of the north west side stream near the project site
SW 4	Ranjangaon	6.65	E	Downhill stream of the project site
SW5	Aurangpur	9.56	SE	Downhill stream of the project site
SW6	Kodapur	6.48	SW	Nathsagar tank to the east of south east side of the project site
SW7	Nandrabad	3.95	W	South of south east side stream of the project site
SW8	Pimpalwadi	9.54	NW	South of south east side stream of the project site

Results observed after monitoring ground water locations and surface water locations are mentioned in Chapter 3 of the EIA report.

f. Noise Level Survey

Study area of 10 Km radius with reference to the proposed project site has been covered for noise environment. The four zones viz. Residential, Commercial, Industrial and Silence Zones have been considered for noise monitoring. Some of the major arterial roads were covered to assess the noise due to traffic. Noise monitoring was undertaken for 24 hours at each location. The details of noise monitoring stations are given in following table

Table 22 Noise Sampling Locations

Station	Station Location	Distance (Km)	Direction
N1	Project Site	-	-
N2	Bhagatwadi	1.20	SW
N3	Janjardi	3.30	SW
N4	Harsul	3.16	S
N5	Shendurwada	3.45	SE
N6	Dhamori Buzurg	2.34	NE
N7	Antapur	3.60	NE
N8	Sultanpur	2.44	NW

Table 23 Ambient Noise Levels

No.	Location	Average Noise Level in dB(A)					
		L ₁₀	L ₅₀	L ₉₀	L _{eq(day)}	L _{eq(night)}	L _{dn}
1	Project Site	60.2	65.4	68.4	73.2	60.3	72.3
2	Bhagatwadi	46.0	47.6	48.9	53.0	42.5	52.8
3	Janjardi	44.4	46.4	48.3	52.3	41.0	51.9
4	Harsul	45.0	46.6	48.0	52.4	41.1	51.9
5	Shendurwada	45.4	47.0	48.3	52.8	41.5	52.3
6	Dhamori Buzurg	43.9	46.9	48.9	52.6	42.4	52.5
7	Antapur	45.1	46.9	47.9	52.3	41.8	52.1
8	Sultanpur	44.5	48.1	49.4	53.3	43.8	53.5

g. Socio-Economic Profile

Survey of 38 villages within 10 Km study area of MSML, taking the reference of census 2011. Survey was carried out with the help of a Simple Random Disproportionate Sampling and Snowball Technique, comprising of 30 questions in Marathi. Chapter 3 may be referred for details of this aspect.

h. Ecology

Field survey was carried out according to random sampling method for flora, and opportunistic sighting method and standard point count method for fauna were followed. In general, visual observation and estimation method was used for qualitative study of the biota. Birds and fish were studied being good indicators of local environmental change. Flora, mainly major tree species, was focused on identification and species abundance.

9) ADDITIONAL STUDIES & INFORMATION

Risks Assessment

Risk to human health is inherent. It is safe only when the installation is dismantled at the end of its useful life. The following principles should be used as guidelines for the selection of risk criteria -

1. Increase in risk, caused by the presence of the plant to local community (i.e. neighboring public) should be negligible in comparison to the risk they already have in their daily life.
2. Work force on the plant should be expected to accept a potentially greater risk than the members of the local community since the work force have been trained to protect themselves from the possible hazards and thus reducing the actual risk to themselves.

The risk criteria considered by Green A.G. (1982) are given as below:

1. Risk to Plant: This risk is to be given priority only when it is proved beyond doubt that the risk to life is so low that reducing this risk may not be justified. Under this consideration, the risk to economic damage may be considered.
2. Risk to Public and Employees: Scale used for risk to employee and public is Fatal Accident Rate (F.A.R.) or more commonly Fatal Accident Frequency Rate. (F.A.F.R.). F.A.R. and F.A.F.R. is defined as number of deaths from industrial injury expected in a group of 1000 men during their working period.

For more details, w.r.t. this aspect, Chapter 7 may be referred.

10) ENVIRONMENTAL IMPACT AND MITIGATION MEASURES

A. Impact on Topography

No major topographical changes are envisaged in the acquired area due to MSML project. Industrial activity would invite positive benefits in the form of land leveling and tree plantation in the plant vicinity and other premises.

B. Impact on Climate

Impact on the climate conditions due to the establishment activity is not envisaged, as emissions to the atmosphere, of flue gases with very high temperatures are not expected.

C. Impact on Air Quality

A study area of 10 km radius is considered for determination of impacts.

i. Baseline Ambient Air Concentrations

24 hourly 98 percentile concentrations of PM₁₀, PM_{2.5}, SO₂ and NO_x in Ambient Air, recorded during the field study conducted for the season October-November-December 2019 are considered as baseline values. They represent impact due to operations of existing nearby industries on this region. Average concentrations of above mentioned parameters, at this location, are considered to be the 'Baseline Concentrations' to determine the impact of proposed industrial operation on ambient air quality. The existing baseline concentrations are summarized in following table-

Table 24 Basline Concentrations at site

Parameter	PM₁₀	PM_{2.5}	SO₂	NO_x	CO
98 percentile	62.09 µg/m ³	21.93 µg/m ³	22.36 µg/m ³	31.66 µg/m ³	0.81 mg/m ³
NAAQS	100 µg/m ³	60 µg/m ³	80 µg/m ³	80 µg/m ³	4 mg/m ³

ii. Air Polluting Sources

Existing boiler of 48 TPH capacity is provided under sugar factory & proposed 10 TPH boiler will be provided under distillery unit.

DG set of capacity 500 KVA is provided under existing project.

D. IMPACT ON WATER RESOURCES

i. Impact on Surface Water Resources & Quality

Surface water along with recycled water will be used to meet water requirement of proposed project. Total trade effluent generated from existing sugar activities is 142 M³/D (As per consent 240 M³/D); treated in existing ETP. Effluent from proposed distillery in the form of spentlees, MEE condensate and other effluents will be treated in proposed CPU & used back in process operations. Hence, there will not be any impact on surface water resource. More details about water budget are presented at Chapter 2 under Section 2.7.1

ii. Impact on Ground Water Resources & Quality

Water required for the industry will be obtained from Jayakwadi Dam. Permissions will be obtained for lifting required amount of water from the Dam. Ground water will not be a source of raw water for the proposed establishment project. Moreover, there will not be any discharge of untreated effluent so there will not be any impact on ground water level and quality.

E. Impact on Soil

Impact on the soil characteristics is usually attributed to air emissions, wastewater discharges and solid waste disposal. Under proposed distillery as well as existing sugar factory, as mentioned above, there will not be discharge of any untreated effluent on land. For proposed boiler ESP will be installed. Boiler ash from proposed distillery boiler is given to cement /brick manufacturers/used as manure whereas ETP sludge is used as manure. CPU sludge and yeast sludge from distillery will be used as filler material for composting/ manure. Domestic effluent will be treated in proposed STP. Hence, there will not be any major increase in chemical constituents of soil through deposition of air pollutants/ discharge of wastewater.

F. Impact on Noise Levels

Workers could get annoyance and can lose concentration during operation. It can cause disturbance during working. People working near the source need risk criteria for hearing damage while the people who stay near the industry need annoyance and psychological damage as the criteria for noise level impact analysis. Major noise emanating sources in MSML complex shall be Fermentation section, distillation section plant, boiler house, turbine rooms, cane crushing section and mill house and DG set etc. MSML is not a major noise producing industry. There shall be no any prominent effect due to Vibration at the project site.

G. Impact on Land Use

Present use of the project land is Industrial wherein the proposed establishment of distillery unit will be implemented in existing project land premises MSML. Hence, no change in the land use pattern is expected. Therefore, the impact on land use is non-significant.

H. Impact on Flora and Fauna

Discharge of the untreated wastewater from the industry in surrounding area can also cause significant environmental impact on the aquatic habitats and affect dependent biodiversity. In case of air pollution, the industry is going to contribute in SPM pollution load in the nearby area. This may have negative impact particularly on avifauna, surrounding crop yields and local population. The details in respect of impacts on ecology and biodiversity are described in Chapter 3.

I. Impact on Historical Places

No historical place is within the study area and the impact is nil.

11) SALIENT FEATURES OF EMP

Following routine monitoring programme as detailed in Table 25 shall be implemented at site. Besides to this monitoring, the compliances to all Environmental Clearance (EC) conditions and regular permissions from CPCB /MoEFCC shall be monitored and reported periodically.

Table 25 Plan For Monitoring of Environmental Attributes within Industrial Premises

No.	Description	Location	Parameters	Frequency	Conducted by
1.	Air Emissions	Upwind – 1, Downwind - 2 (Near main gate, Fermentation section, Distillation section)	PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO	Monthly	MoEFCC & NABL Approved External Lab
		Study area – (Industrial Site, Dhamori Bk., Ranjangaon Khuri, Kodapur Jhanjadi, Malwadi, Antapur, Harsuli, Bhagatwadi)		Quarterly	
2.	Stack Emissions	Boiler – 2 No., D.G Set – 1 Nos.	SO ₂ , SPM, NO _x	Monthly	
3.	Noise	Workzone 5 Locations - (Near Main Gate, Near Fermentation Section Distillation section, Boiler, DG set, Turbine)	Spot Noise Level recording; Leq(n), Leq(d), Leq (dn)	Monthly	
		Ambient Noise location - 8		Quarterly	
4.	Drinking water	Canteen	Parameters as per drinking water Std IS10500	Monthly	
5.	Soil	8 locations - (Project site, Shendurwada, Wajhar, Bhagatwadi, Sarangpur, Imampurwadi, Tandulwadi, Nandrabad)	pH, Salinity, Organic Carbon, Nitrogen, Phosphorous and Potash	Quarterly	
6.	Water Quality (Ground Water & Surface Water)	Locations in study area - Ground Water & Surface Water	Parameters as per CPCB guideline for water quality monitoring – MINARS/27/2007-08	Quarterly	
7.	Effluent	Treated, Untreated	pH, SS, TDS, COD, BOD, Cl, Sulphates, Oil & Grease.	Monthly	
8.	Waste management	Implement waste management plan that Identifies and characterizes every waste associated with proposed and existing activities and which identifies the procedures for collection, handling & disposal of	Records of Solid Waste Generation, Treatment and Disposal shall be maintained	Twice in a year	By MSML

No.	Description	Location	Parameters	Frequency	Conducted by
		each waste arising.			
9.	Emergency Preparedness such as fire fighting	Fire protection & safety measures to take care of fire & explosion hazards, to be assessed & steps taken for their prevention.	On site Emergency Plan, Evacuation Plan, firefighting mock drills	Twice a year	By MSML
10.	Health Check up	Employees and migrant Labour health check ups	All relevant health check-up parameters as per factories act.	Twice a Year	By MSML
11.	Green Belt	Within Industry premises as well as nearby villages	Survival rate of planted sapling	In consultation with DFO.	By MSML
12.	CER	As per activities	--	Six Monthly	By MSML