P-449-BSSAILEIA-SUGAR-82021
(Revision - 01)

SUMMARY ENVIRONMENTAL IMPACT ASSESSMENT (EIA) REPORT

(IN ENGLISH AND MARATHI)

FOR

EXPANSION OF SUGAR FACTORY FROM 5,000 TO 12,000 TCD & CO-GENERATION PLANT FROM 25 TO 60 MW AND MOLASSES BASED DISTILLERY FROM 60 TO 200 KLPD USING C / B HEAVY MOLASSES / SUGARCANE SYRUP.

BY

BABANRAOJI SHINDE SUGAR AND ALLIED INDUSTRIES LTD.

GAT NO.160, A/P: TURKPIMPARI, TAL: BARSHI,
DIST.: SOLAPUR, MAHARASHTRA.

PREPARED BY

Equinox Environments (India) Pvt. Ltd.

EQUINOX ENVIRONMENTS (I) PVT. LTD.

Environmental; Civil & Chemical Engineers, Consultants and Analysts, Kolhapur (MS)

E-mail: projects@equinoxenvi.com, eia@equinoxenvi.com

An ISO 9001 : 2015 & QCI - NABET Accredited Organization

JUNE - 2021

BABANRAOJI SHINDE SUGAR & ALLIED INDUSTRIES LTD.

Factory - At. Turk-Pimpari, Tal. Barshi, Dist. Solapur- 413 401
CIN: U15420PN2011PLC138268Dt.21/03/2011
GSTIN : 27AACC15569F1ZE

BSSAIL/ADMIN/ 363 /2022-23 **Date: 12.08.2022**

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 Expansion of Molasses based Distillery from 60 to 200 KLPD by using C / B Heavy Molasses / Sugarcane Syrup, Sugar Factory from 5000 to 12000 TCD & Co-generation Plant from 25 to 60 MW by–**Babanraoji Shinde Sugar and Allied Industries Ltd., (BSSAIL)** is located A/p: Turkpimpari, Tal: Barshi, Dist.: Solapur, Maharashtra.

Dear Sir,

We –**Babanraoji Shinde Sugar and Allied Industries Ltd., (BSSAIL)** –have Expansion of Molasses based Distillery from 60 to 200 KLPD by using C / B Heavy Molasses / Sugarcane Syrup, Sugar Factory from 5000 to 12000 TCD & Co-generation Plant from 25 to 60 MW.

Accordingly, an online application of Form – I was submitted to '**MoEFCC;** New Delhi for grant of ToRs on 04.08.2022 for grant of ToR. Subsequently, our applicationwas considered &ToR has been granted on 19.06.2022. Refer**Enclosure – I** for thesame. As per standard ToR the directions were given to conduct Public Hearing w.r.t our proposedproject. Now, in order to conduct Public Hearing, we hereby are submitting all the relevant documents and information to your office.

Alongwith 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 Productsand 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. 1,00,000/- (Rs.One Lakhonly) bearing No.248837 drawn on Bank of Baroda dated 12.08.2022 towards the Public Hearing charges, as decided by the govt., has been presented herewith.

Please do the needful and oblige.

Thanking you.

BABANRAOJI SHINDE SUGAR & ALLIED INDUSTRIES LTD. Regd. No. U15420PN 2011PLC 138268

Yours faithfully,

Shri. Kailas Babasaheb Mate
(General Manager)
Babanraoji Shinde Sugar and Allied Industries Ltd.

Encl.: 1.A Draft EIA Report & Summary EIA Report
2.A.D. bearing No. 248837 dated 12.08.2022 drawn on Bank of Baroda .

बैंक ऑफ़ बड़ौदा
Bank of Baroda

बार्शी - ४१३ ४०१
BARSHI - 413 401
RTGS/NEFT IFSC CODE **BARB0BARSHI**
35770015181192

डिमांड DEMAND / ड्राफ्ट DRAFT

जारी किए जाने की तारीख से तीन महीने तक वैध VALID FOR THREE MONTHS FROM THE DATE OF ISSUE

D	D	M	M	Y	Y	Y	Y
1	2	0	8	2	0	2	2

माँगे जाने पर On Demand Pay THE SUB REGIONAL OFFICER MAHARASHTRA POLLUTION CONTROL BOARD, SOLAPUR

या उनके आदेश पर Or Order

रुपये Rupees One Lakh Only

Nor Over INR. 1,00,000.00

अदा करें ₹ 1,00,000=00

मूल्य प्राप्त हुआ / FOR VALUE RECEIVED

Purchaser Name: Babanraoji Shinde Sugar And Allied Industries Ltd.
SHOLAPUR MAIN
SOLAPUR - 413002

अदाकर्ता शाखा / Drawee Branch

कृते बैंक ऑफ़ बड़ौदा
For Bank of Baroda

संयुक्त प्रबंधक / Joint Manager

शाखा प्रबंधक / Branch Manager

DD/2016/XD
(DD Alpha Prefix)

अल्फा कूट ALPHA CODE
B A R S H I
(SHOLAP)

248837

ह.स.न. / S.S. NO. (15963)

ह.स.न. / S.S. NO. (G/2386

MANIPAL TECHNOLOGIES LIMITED, KARNATAKA / CTS-2010

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⑈248837⑈ 413012202⑆ 203577⑈ 16

CERTIFICATE

Declaration by Expert contributing to the Draft EIA in respect of proposed Expansion of Molasses based Distillery from 60 to 200 KLPD by using C / B Heavy Molasses / Sugarcane Syrup, Sugar Factory from 5000 to 12000 TCD & Co-generation Plant from 25 to 60 by **Babanraoji Shinde Sugar and Allied Industries Ltd., (BSSAIL)**, /p: Turkpimpari, Tal: Barshi, Dist.: Solapur, Maharashtra.

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-449-BSSAILEIA-SUGAR-82021

EIA Coordinators

Name : Dr. Sangram Ghugare

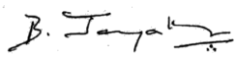
Period of Involvement : October – November - December 2021

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	**September 2021- August 2022** • 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**	Miss. Sulakshna Ayarekar	**September 2021- August 2022** • 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.	

Sr. No.	Functional Area	Name of the expert/s	Involvement (Period & Task)	Signature
			• Interaction with local residents for obtaining information about various species of animals and birds usually observed their existence and importance in the study region. • 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**	Dr. V. B. Jugale	**September 2021- August 2022** • 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	**September 2021- August 2022** • 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 viewpoints of efficiencies, capital as well as O & M cost & suitability. • Identification of impact and suggesting the mitigation measures.	
5	**AQ**		**September 2021- August 2022** • 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**	Mr. Jayakumar Baddela	**September 2021- August 2022** • 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. Thorat	**September 2021- August 2022** • 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	**September 2021- August 2022** • 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. • 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.	
10	**LU**			
11	**SHW**	Dr. Sangram Ghugare	• 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
			• Practices of storage and disposal of HW its impact and mitigation measures.	
12	**SC**	Mr. Ratnakumar Mudliar	**September 2021- August 2022** • 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 proposed Expansion of Molasses based Distillery from 60 to 200 KLPD by using C / B Heavy Molasses / Sugarcane Syrup, Sugar Factory from 5000 to 12000 TCD & Co-generation Plant from 25 to 60 by **Babanraoji Shinde Sugar and Allied Industries Ltd., (BSSAIL)**, /p: Turkpimpari, Tal: Barshi, Dist.: Solapur, Maharashtra.

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/IA/1821/ RA 0135 dated 04.10.2022

INDEX

Summary of Draft EIA Report For

The Expansion of Molasses based Distillery from 60 to 200 KLPD using C / B heavy Molasses/ Sugarcane Syrup, Sugar Factory from 5,000 to 12,000 TCD & Co- generation plant from 25 to 60 MW in the Existing premises of Babanraoji Shinde Sugar and Allied Industries Ltd. (BSSAIL);

At: - Turkpimpari, Tal- Barshi, Dist. - Solapur, Maharashtra.

1) THE PROJECT

Babanraoji Shinde Sugar and Allied Industries Ltd. (BSSAIL) located At: - Turkpimpari, Tal- Barshi, Dist. - Solapur, Maharashtra. Geographical location of the site is 18°01'26.06"N latitude and 75°37'20.57"E longitude. BSSAIL is an integrated project complex comprising of 5000 TCD Sugar Factory, 25 MW Co-generation Plant & 60 KLPD distillery. These existing units have been granted EC from MoEFCC New Delhi vide No. J.11011/68/2013 IA II(I) dated 27th Oct, 2015. In the name of M/s. Indian Sugar manufacturing Company Ltd. was registered in the year 2011. Subsequently, the first cane crushing season was the undertaken year 2016-17 with 5000 TCD Sugar Factory & 25 MW Co-gen Plant as Babanraoji Shinde Sugar and Allied Industries Ltd. In the Year 2017 the name M/s. Indian Sugar Manufacturing Company Ltd was changed to Babanraoji Shinde Sugar and Allied Industries Ltd and procured an amended EC letter from MoEFCC, New Delhi vide letter No. J.11011/68/2013 IA II (I) dated 7th Dec, 2017. Existing units of Sugar Factory, Co-gen Plant have been granted Consent to Operate (CTO) by MPCB. But, 60 KLPD Distillery is yet to be implemented on site because of some financial crises. Now, Management has decided expand the Distillery capacity from 60 to 200 KLPD ethanol production for meeting the National Demand of Bioethanol under the Ethanol Blending Program (EBP) -2018 & thereby implementing the 200 KLPD Distillery unit. As per the provision of "EIA Notification No. S. O. 1533 (E)" dated 14.09.2006 as amended vide Notification dated 13 June 2019, the project comes under Category - A. Accordingly, Form -1 application is submitted to SEAC, DoE and ToRs granted on 19.04.2022. Details of capital investment are given in table 1.

Table 1 Project Investment Details

No.	Industrial Unit	Capital Investment (Rs. Cr.)		
		Existing	Proposed	Total
1	Sugar Factory	116.0	175.0	291.0
2	Distillery	24.51	155.0	179.51
3	Co-gen Plant	85.0	168.0	253.0
	Total	**225.51**	**498.00**	**723.51**

2) THE PLACE

Total land area acquired by the BSSAIL is 37.05 Ha. Out of this; total built up area after expansion will be 11.98 Ha. Detailed area statement is presented at Table 2 from which it could be seen that sufficient land is available with BSSAIL for various activities under existing and proposed projects. Refer Appendix - A of Draft EIA report for plot layout plan.

Table 2 Area Break up

No	List of area	Existing	Expansion	Total
1	**Total Plot Area**	**3,70,528**		**3,70,528**
2	Sugar & Co-gen	28,854	71,000	99,854
	Distillery	-	20,000	20,000
	Total built up Area	**28,854**	**91,000**	**1,19,854**
3	Parking Area	51654	24000	75654
		14%	6%	20%
4	Area Under Road	13,608	1,743	15,351
5	Green Belt Area	38,302	85,000	1,23,302
		10%	23%	**33%**
6	**Total Open Area**	**2,38,110**		36,367

3) THE PROMOTERS

BSSAIL promoters are well experienced in the field of Sugar Factory & Co-gen Plant and have made a thorough study of entire project planning as well as implementation schedule. The names and designations of the promoters are as under-

Table.3 List of Promoters

No.	Name	Designation
1	Mr.Santosh Vyankates Garad	Director
2	Mr. Ravindra Suresh Shinde	Director
3	Mr. Mahesh Laxman Balsaraf	Director
4	Mr. Kailas Babasaheb Mate	General Manager

4) THE PRODUCTS

The details of products that are being manufactured under the existing Sugar Factory, Co-gen Plant & Distillery as well as those to be manufactured under Sugar Factory & Distillery expansion are represented in the following table.

Table 4. Product & By-product of for integrated Complex

Industrial unit	Product& By-product	**Quantity** (MT/M)		
		Existing	**Expansion**	**Total**
Sugar Factory (5000-12000 TCD)	**Products**			
	Sugar (12%)	18,150	25,050	43,200
	By-products			
	Molasses (5%)	7,500	10,500	18,000
	Bagasse (30%)	45,000	63,000	1,08,000
	Press Mud (4%)	3,000	4,200	7,200
Co-Gen (25-60 MW)	**Electricity (MW)**	25	35	60
Distillery (60-200 KLPD)	**Products**			
	Ethanol/ ENA/ RS	1800 KLPM	4200 KLPM	6000 KLPM
	By-Products			
	Fusel Oil	3.3	7.7	11
	CO_2 Gas	1500	3480	4,980

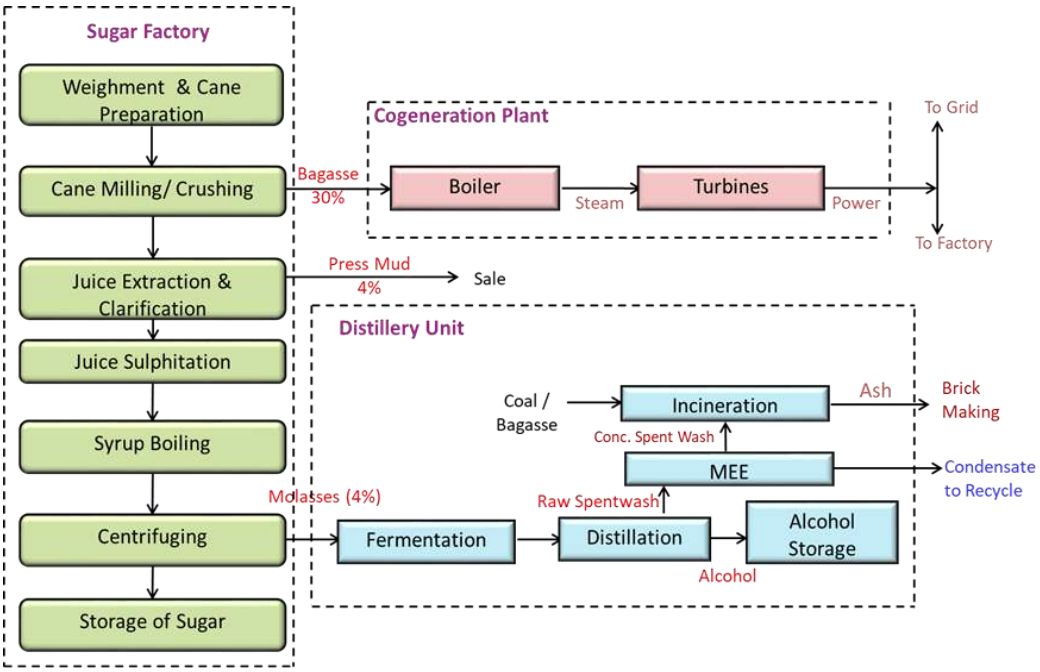
Note-* - % sugar cane crushed

5) THE PURPOSE

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 BSSAIL decided go for expansion of Sugar Factory from 5,000 to 12,000 TCD & Co-generation plant from 25 to 60 MW and Molasses based Distillery from 60 to 200 KLPD using C / B Heavy Molasses / Sugarcane Syrup.

6) MANUFACTURING PROCESS

Figure 1 Integrated Manufacturing Process Operations



7) ENVIRONMENTAL ASPECTS

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

A. Water Use, Effluent Generation and its Treatment

a. Water Use

Total water requirement after expansion of distillery shall be to the tune of 2326 M^3/Day. Out of this 536 CMD will be Fresh water taken from Ground water, 376 CMD will be recycled water proposed Distillery CPU condensate, 1590 CMD will be Distillery CPU Treated Effluent Recycle During Molasses based operations & 116 CMD water from Excess Condensate Water. Total water required after expansion for existing Sugar Factory & Co-gen plant total 6417 CMD water is used. Out of this 25 CMD is fresh water taken from CGWA, 5765 CMD is actual sugar cane condensate. 582 CMD is STP treated and sugar ETP treated water & 45 CMD is

Rain water Harvesting. More details about water budget are presented in EIA report at Chapter 2

Table 5 Water Consumption in Expansion of Sugar Factory & Cogen

No.	Description	Existing Water Consumption (M^3/D)	After Expansion Water Consumption (M^3/D)
A	Domestic	#25	36 (#25+ $11)
B	Industrial		
	a. Process	*1765	*4271
	b. Cooling Makeup	*450	*1080
	c. Boiler Makeup	*240	*336
	d. DM Backwash	*48	*67
	e. Lab & Washing	*3	*6
	f. Ash Quenching	*2	*5
	Industrial Use	*2508 (100 % Recycle)	*5765 (100 % Recycle)
C	Green Belt	$200	616 ($571+Ω45)
D	**Grand Total**	2733 (*2508+#25+$200)	6417 (*5765 +#25+ $582+Ω45)
	Fresh Water Consumption (100 Lit/ MT of Cane Crushed)	0	0

Note:# - Fresh water taken from Ground Water, * - Actual Sugar Cane Condensate, $ - STP Treated and Sugar ETP Treated water, Ω- Rainwater Harvesting.

Table 6 Water Consumption in Expansion of Distillery

No.	Description	Existing 60 KLPD		After Expansion 200 KLPD		
				Molasses based Distillery		
		Crushing	Non-Crushing	Crushing	Non-Crushing	Syrup Based
1	**Domestic**	#5	#5	#18	#18	#18
2	**Industrial**					
	Process (Fermentation & Dilution)	♣ 477	♣ 477	♣1590	♣1590	-
	Cooling Makeup	180 (*170+ ♣10)	180 (#170+ ♣10)	*600	600 (*82+#518)	Ø600
	Boiler Makeup	*53	#53	*84	#84	Ø84
	DM Plant	*11	#11	*17	*17	Ø17
	Lab & Washing	*3	#3	*10	*10	Ø10
	Ash Quenching	*3	#3	*7	*7	Ø7
	Industrial Use	727 (♣487+*240) **(100 % Recycle)**	727 (♣ 477+#240) **(65 % Recycle)**	2308 (♣ 1590 + *718) **(100 % Recycle)**	2308 (♣1590 +*116+#518) **(80 % Recycle)**	Ø718 **(100 % Recycle)**
	Total	732 (♣487+*240+#5)	732 (♣487+#245)	2326 (♣1590+#18+*718)	2326 (♣ 1590+*116+#536)	736 (Ø718+#18)
	Norm: Fresh water Consumption 10 KL/KL of Alcohol.	0 KL/KL	4 KL/KL	0 KL/KL	2.7 KL/KL	0 KL/KL

Note :# - Fresh water from Ground Water, ♣ - Distillery CPU Treated Effluent Recycle During Molasses based operations ,* - Excess Condensate Water , Ø - Distillery CPU Treated Effluent Recycle During Sugarcane Juice based operations.

Table 7 Effluent Generation Sugar Factory & Co-gen Plant

No.	Description	Existing (M^3/D)	After Expansion (M^3/D)	Treatment
1	**Domestic**	20	30	Treated in Proposed STP.
2	**Industrial**			
	a. Process	212	513	Treated in existing ETP having primary, secondary & tertiary treatment will be upgraded under expansion.
	b. Cooling Makeup	45	108	
	c. Boiler Makeup	48	67	
	d. DM Backwash	48	67	
	e. Lab & Washing	3	6	
	f. Ash Quenching	0	0	
	Industrial Total	**356**	**761**	
	Effluent Generation (200 Lit/ MT of Cane Crushed)	71 Lit/MT	63 Lit/MT	

Table 8 Water Effluent Generation from Proposed Distillery

No.	Description	Existing 60 KLPD	After Expansion 200 KLPD		Treatment
			Molasses	**Cane Syrup**	
1	**Domestic**	4	14	14	Treated in Proposed STP.
2	**Industrial**				
	Fermentation Dilution	Raw Spent wash – 480 Conc. Spent wash - 96	Raw Spent wash – 1600 Conc. Spent wash-320	Raw Spent wash – 800 Conc. Spent wash-160	Raw Spent wash shall be concentrated in MEE. Conc. Spent wash shall be incinerated in incineration Boiler (1.6 KL/ KL).
		MEE Condensate – 384	MEE Condensate - 1280	MEE Condensate - 640	Other effluent viz. MEE Condensate, spent lees, cooling blow down, boiler blow down, lab & washing & DM backwash shall be forwarded to distillery CPU. Treated effluent shall be recycled in process to achieve ZLD of process effluent.
		Spent lees –83	Spent lees –278	Spent lees –176	
	Cooling Tower Make up	27	90	90	
	Boiler Makeup	11	17	17	
	DM Plant	11	17	17	
	Lab &Washing	3	10	10	
	Total	Other Effluent 52	Other Effluent 134	Other Effluent 134	
	Grand Total	**Other effluent – 519**	**Other effluent – 1692**	**Other effluent – 950**	
		Conc. Sp. wash – 96	**Conc. Sp. wash – 320**	**Conc. Sp. wash –160**	
	Effluent Generation - Spwash Generation - 8 KL/ KL of Alcohol	1.6 KL/ KL of Alcohol	1.6 KL/ KL of Alcohol	0.8 KL/ KL of Alcohol	

b. Effluent Treatment

i) Domestic Effluent

Domestic effluent generated from existing complex is to the tune of 24 CMD same is being treated in soak pit followed by septic tank. After implementation of expansion project, total

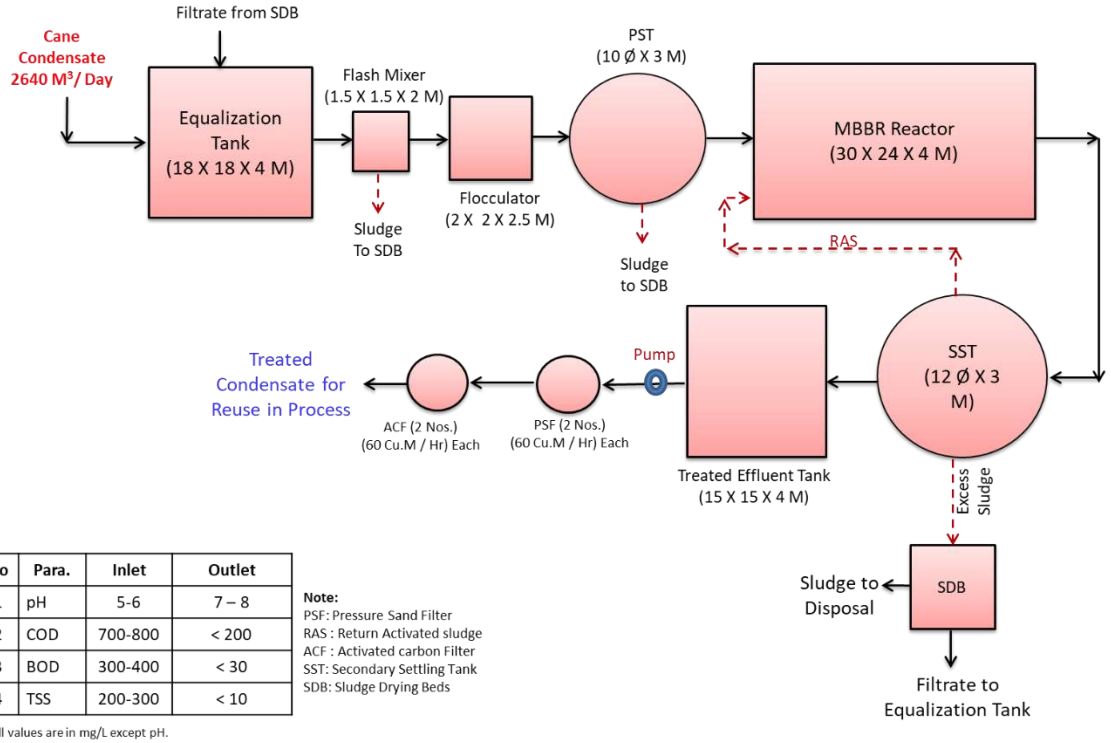
domestic effluent from BSSAIL campus shall be 44 CMD (30 CMD from Sugar Factory & Co-gen Plant and 14 CMD from distillery) same shall be treated in Proposed STP.

ii) Industrial Effluent

Total trade effluent generated from existing Sugar Factory & Co-gen Plant is 356 CMD. Same is treated in existing Effluent Treatment Plant (ETP) having capacity 500 M^3/D provided on site comprising of primary, secondary & tertiary unit operations. ETP will be upgraded after expansion. Presently, treated effluent from ETP is used for development of green belt. After expansion activity, treated effluent from Sugar Factory & Co-gen Pant @761 CMD will be reused for green belt in own factory premises. Thereby, achieving Zero Liquid Discharge (ZLD) of effluent. Flow chart of existing sugar factory ETP and CPU is presented at figure –4 & 2. Under expansion activity CPU under sugar factory will be installed.

Effluent generated from 200 KLPD Distillery operations, total raw spentwash is generated @ 1600 M^3/D, same is concentrate in Multiple effect evaporator (MEE) and the conc. spentwash @ 320 MT/D (1.6 KL/KL of alcohol) will be blended with coal / bagasse and burnt in 35 TPH incineration boiler. Other effluents viz. spent lees @ 278 M^3/D, MEE condensate @ 1280 M^3/D and other effluents @ 134 M^3/D treated in CPU under distillery unit. Refer figure 3 for the same. Treated water from CPU will be reused in process and boiler makeup, thereby achieving Zero Liquid Discharge (ZLD).

Figure 2 Flow Chart of Proposed Sugar CPU

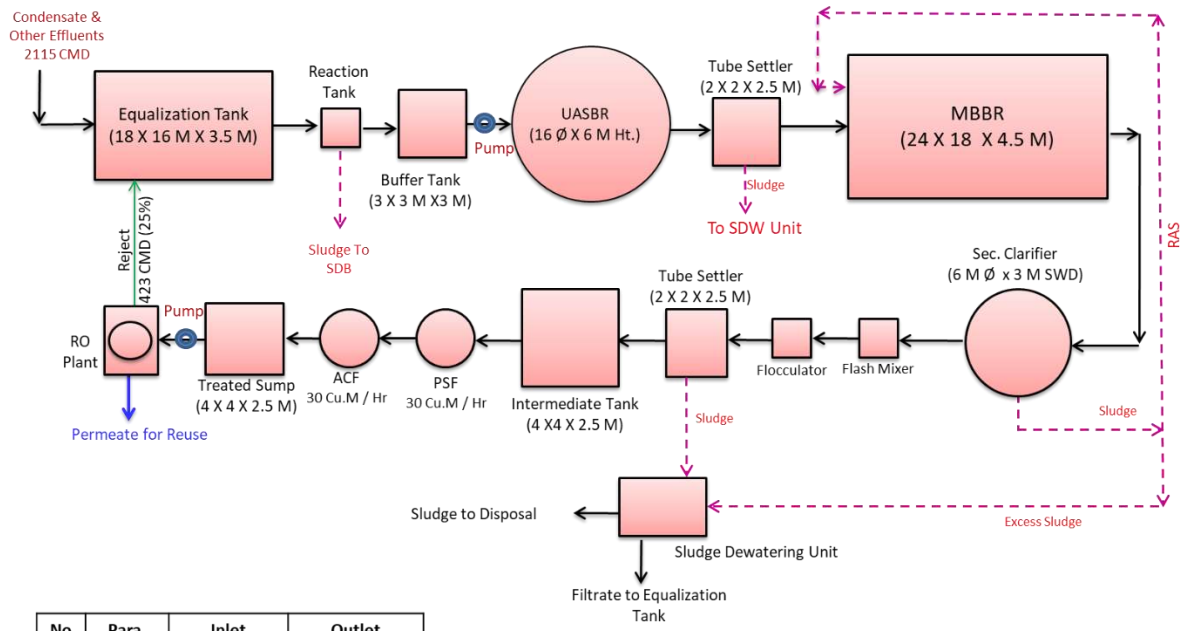


No	Para.	Inlet	Outlet
1	pH	5-6	7 – 8
2	COD	700-800	< 200
3	BOD	300-400	< 30
4	TSS	200-300	< 10

All values are in mg/L except pH.

Note:
PSF: Pressure Sand Filter
RAS : Return Activated sludge
ACF : Activated carbon Filter
SST: Secondary Settling Tank
SDB: Sludge Drying Beds

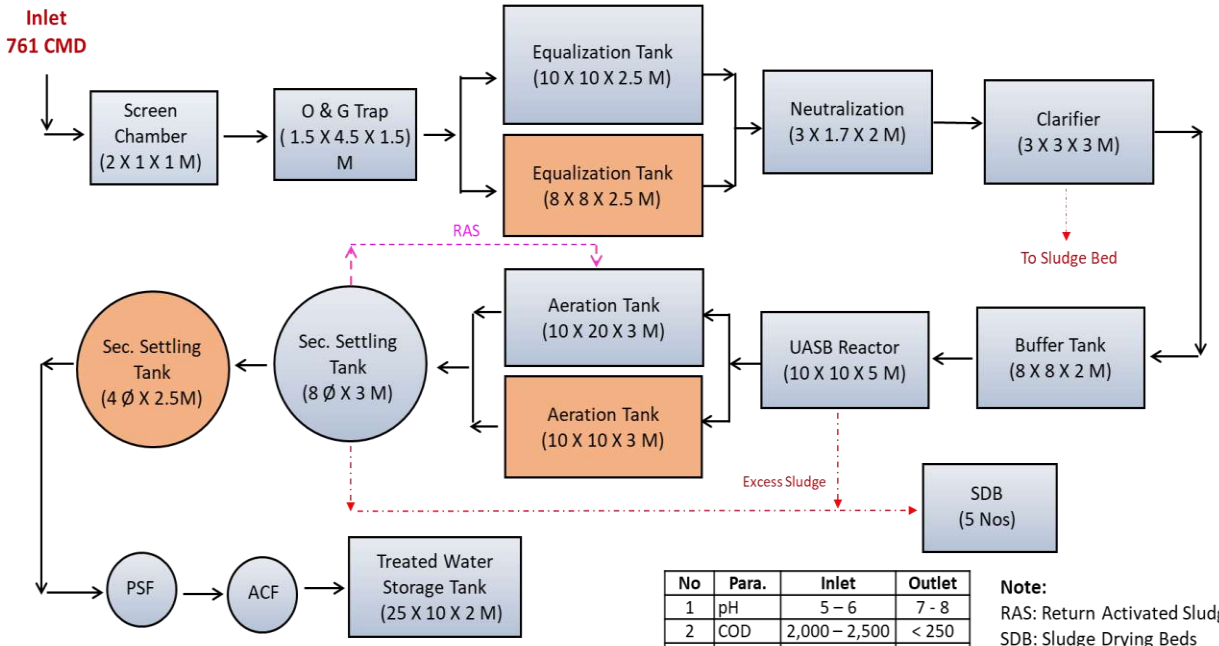
Figure 3 Flow Chart of Proposed Distillery CPU



No	Para.	Inlet	Outlet
1	pH	5-6	7 – 8
2	BOD	2000-2500	< 50
3	COD	3500-4000	< 100
4	TDS	2000-3000	< 100

Note:
PSF: Pressure Sand Filter
ACF : Activated carbon Filter
SST: Secondary Settling Tank
SDW Unit: Sludge Dewatering Unit

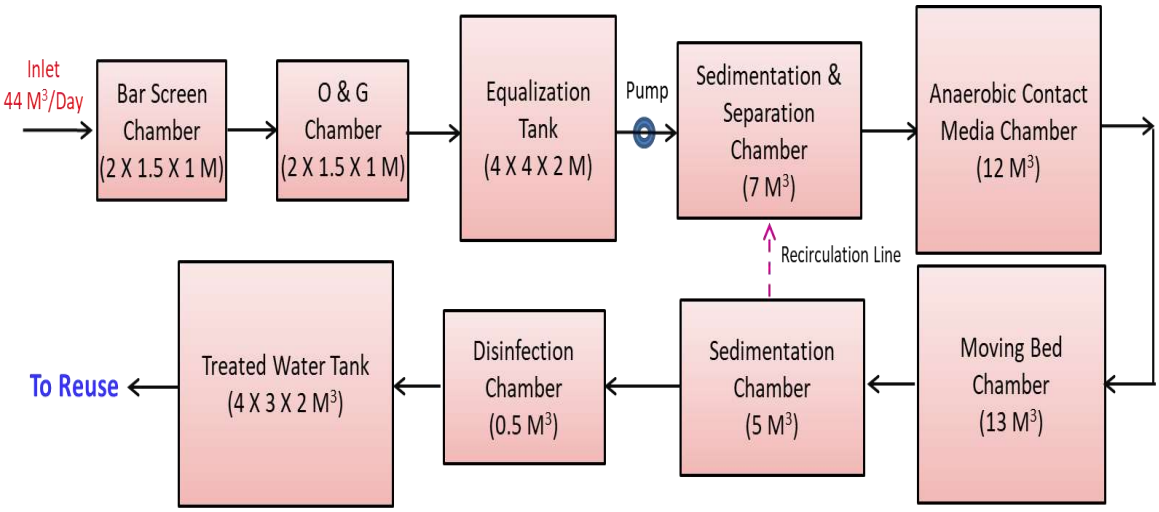
Figure 4 Flow Chart of Existing Sugar Factory ETP



No	Para.	Inlet	Outlet
1	pH	5 – 6	7 - 8
2	COD	2,000 – 2,500	< 250
3	BOD	1,000 – 1,500	< 100
4	TDS	1,800 – 2,200	< 2,100
5	SS	250 – 300	<100

Note:
RAS: Return Activated Sludge
SDB: Sludge Drying Beds
PSF: Pressure Sand Filter
ACF : Activated Carbon filter

Figure 5 Flow Chart of Proposed STP



No	Parameter	Unit	Inlet	Outlet
1	pH	---	6.0 – 8.5	6.0 – 8.5
2	COD	mg/lit	400 – 500	< 50
3	BOD	mg/lit	250 – 300	< 10
4	TSS	mg/lit	150 - 250	< 30
5	O & G	mg/lit	20 - 30	< 10

B. Air Emissions

Under proposed project 60 TPH bagasse based boiler & 35 TPH incineration boiler will be installed. Steam required will be taken from existing as well as proposed boilers. Bagasse will be used for 60 TPH boiler & ESPs along with stack of 60 M height will be provided. Conc. Spent wash + Coal/ Bagasse will be used for 35 TPH boiler & ESPs along with stack of 65 M Height will be provided.

Table 9. Details of Boiler and Stack in BSSAIL

No	Description	Sugar Factory & Co-gen plant		Distillery
Stack attached to		Boilers (Existing)	Boilers (Proposed)	Boilers (Proposed)
1	Capacity	140 TPH	60 TPH	35 TPH
2	Fuel type	Bagasse	Bagasse	Conc. Spent wash + Coal/ Bagasse
3	Fuel Qty. (MT/D)	1680	720	216 MT+ 93 MT/233 MT
4	Stack Ht. (M)	65	60	65
5	MOC	R.C.C	R.C.C	R.C.C
6	Shape	Round	Round	Round
7	Diameter (M)	5	2	2
8	APC Equipment	ESP	ESP	ESP

Table 10. Details of DG sets

No.	Description	Existing (Sugar Factory & Co-gen plant)		Proposed (Distillery)
Stack attached to		DG Set (Existing)	DG Set (Proposed)	DG Set (Proposed)
1	Capacity	500 KVA -3 Nos.	500 KVA	500 KVA
2	Fuel type	Diesel	Diesel	Diesel
3	Fuel Qty. (MT/D)	900 lit (Each)	900 lit	900 lit
4	Stack Ht. (M)	7.31	7.31	7.31
5	MOC	Metal	Metal	Metal
6	Shape	Rectangular	Rectangular	Rectangular
7	Diameter (M)	1.82	1.22	1.22
8	APC Equipment	-	--	--

C. Noise Pollution Aspect

1. Sources of Noise

i. 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.
ii. 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).
iii. Existing sugar factory and co-gen; noise generating sources are the boiler house, turbine rooms, cane crushing section and mill house, etc.
iv. Adequate green would be developed in phase wise manner in and around the industry. So that it would further attenuate the noise levels.

2. Control Measure

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.

D. Hazardous Wastes

Different types of hazardous wastes that are being generated from existing sugar factory and their disposal is presented in the following table.

Table 11 Details of Hazardous Waste

No.	Category	Quantity (MT/A)		Disposal
		Existing	After Expansion	
1	(5.1) Used / Spent Oil	0.43	1.45	Sales to Authorized Recyclers

No hazardous waste generated under distillery.

E. Solid Wastes

Table 12 Solid Waste Generation & Disposal

No.	Industrial Unit	Type	Quantity (MT/D)		Disposal
			Existing	After Expansion	
1	Sugar Factory	ETP Sludge	0.3	0.76	Use as Manure
		Boiler Ash	42	60	Utilization in Brick making Plant in own premises
2	Distillery	Boiler Ash	28	105	

No.	Industrial Unit	Type	Quantity (MT/D)		Disposal
			Existing	After Expansion	
		Yeast Sludge	13	42	Burnt in incineration boiler
		CPU Sludge	0.5	1.6	

F. Odor 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.

G. 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.

H. Environmental Management Cell (EMC)

BSSAIL is already having an EMC functioning under its sugar factory. Members of the EMC are well qualified and experienced in their concerned fields. This cell shall be further augmented suitably under proposed establishment of distillery. EMC members are as under.

Table 13. Environmental Management Cell of BSSAIL

No.	Name of Member	Designation
1	Mr. Arvind Choudhari	Chief Chemist
2	Mr. G. R. Ekhande	ETP Operator
3	Mr. A.D. Kadam	Chemist

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

Table 14. Capital as well as O & M Cost (Existing & Proposed)

No.	Description	Cost (Rs. Lacs)	
		Capital	O & M/Yr
A	**Existing**		
1	Air Pollution Control: 65 M stack for 140 TPH Boiler (ESP) & OCMS	620	60
2	Water Pollution Control: Sugar Factory ETP & OCMS	100	10
3	Noise Pollution Control	35	5
4	Environmental Monitoring & Management, Lab & Chemicals	50	5
5	Occupational Health & Safety	50	5
6	Green Belt Development	80	8
	(4% of Rs. 225.51 Cr; Existing Investment) Total	Rs. 935	Rs. 93
B	**Sugar Factory, Co-gen Plant & Distillery Expansion**		
1	Air Pollution Control: 60 TPH incineration Boiler (ESP- 2 Nos.), Stacks (2 Nos. of height 65 & 35 M)& OCMS	1260	120

No.	Description	Cost (Rs. Lacs)	
		Capital	O & M/Yr
2	Water Pollution Control: Sugar Factory upgradation ETP & CPU, Distillery CPU, MEE, Spentwash Storage Tank, STP and OCMS	2075	200
3	Noise Pollution Control	50	5
4	Environmental Monitoring & Management, Lab & Chemicals	50	5
5	Occupational Health & Safety	100	10
6	Green Belt Development	100	10
	(7% of Rs. 498 Cr; expansion Investment) Total	Rs. 3635	Rs.350
	Grand Total (A + B)	**Rs. 4570**	**Rs. 443**

I. Rainwater Harvesting Aspect

- Average annual rainfall in the area = 833 mm

Table 15 Area Taken for RWH

Sr. No.	Description	Area (Sq. M.)	Annual Average Rainfall (M)	Runoff Factors Considered	RWH Quantity (M^3)
1	**Roof Top Harvesting**				
	Rooftop Area	83,898	0.83	0.8	55,910
				Total Rooftop Harvesting	**55,910**
2	**Surface Water Harvesting**				
	Green Belt Area	1,23,302	0.83	0.3	30,813
	Area under Roads	15,351	0.83	0.5	6,394
	Open Space	36,368	0.83	0.3	9,088
	Parking Area	75,654		0.5	31,510
				Total Surface Water Harvesting	**77,805**
				Grand Total (A+B)	1,33,715 M^3
					133.7 ML

J. Green Belt

Table .16 Area Details

No.	Description	Area (Sq. M)
1	Total Plot Area	3,70,528
2	Built up area (Sugar factory, distillery & other)	1,19,854
3	Total Open Area	36,367
4	Existing Green Belt Area (10% of Total plot area)	38,302
5	Proposed Green Belt Area under establishment (23% of TPA)	85,000
6	Total Green belt –33% of total Plot area	**1,23,302**

Criteria for Green Belt Development Plan

Emission of SPM, SO_2 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.

Socio-Economic Development

Socio economic study was carried within 10 Km radius of the study area was carried out with the help of a structured close ended interview schedule, comprising of 32 questions in Marathi, which was drafted prior to and employed during the survey. Refer Socio – economic profile in

Chapter 3 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.

7) ENVIRONMENTAL MONITORING PROGRAMME

Reconnaissance of the study area was undertaken in the Pre monsoon period. Field monitoring for measuring meteorological conditions, ambient air quality, water quality, and soil quality and noise levels was initiated. Report incorporates the data monitored during the period from **October – November - December 2021** 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 and traffic etc. 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 17 Land Use/ Land Cover

No.	Classes	Area in Ha.	Percentage
1	Built Up Area	420	1.34
2	Crop Land	18057	57.48
3	Fallow Land	11968	38.10
4	Barren Land/Rocky	685	2.18
5	Water Bodies	60	0.19
6	River	225	0.72
	Total	**31415**	**100.00**

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, Aurangabad.

Meteorological parameters were monitored during the period **October - November - December 2021**. Details of parameters monitored, equipment's used and the frequency of monitoring have been given in Chapter 3 of the EIA report. Hereunder, details of predominant wind directions and wind categories are given.

D. Air Quality

This section describes the selection of sampling locations, includes the methodology of sampling and analytical techniques with frequency of sampling. Presentation of results for October - November - December 2021 survey is followed by observations. All the requisite monitoring assignments, sampling and analysis was conducted through the laboratory of Green Envirosafe Engineers & Consultant Pvt. Ltd., Pune which is NABL accredited and MOEFCC; New Delhi approved organization. Further, same has received certifications namely ISO 9001–2015 and OHSAS 18001–2007 from DNV. Ambient air monitoring was conducted in the study area to assess the quality of air for PM_{10}, $PM_{2.5}$, SO_2, NO_x and CO. Various monitoring stations selected are shown in table.

Table 18 Ambient Air Quality Monitoring (AAQM) Locations

No.	Location	Direction From Site	Distance (Km)	Direction
A1	Industrial Site	--	---	---
A2	Hatkarwadi	Upwind	3.70	E
A3	Kapshewadi		4.41	E
A4	Kevad	Downwind	3.90	W
A5	Undargaon		4.60	W
A6	Jamgaon	Crosswind	3.57	N
A7	Kadamvasti		1.92	SE
A8	Turk-Pimpri	Nearest Habitat	2.29	NE

Table 19 Summary of the AAQ Monitoring Results for Season
[October-November-December 2021]

		Location							
		A1	**A2**	**A3**	**A4**	**A5**	**A6**	**A7**	**A8**
PM_{10} $\mu g/M^3$	Max	66.9	57.9	56.9	59.9	58.8	57.9	57.0	59.0
	Min	63.2	53.2	54.1	57.1	56.0	55.1	54.2	56.1
	Avg	65.2	55.9	55.7	58.4	57.4	56.4	55.5	57.5
	98%	66.9	57.7	56.9	59.9	58.8	57.9	57.0	59.0
$PM_{2.5}$ $\mu g/M^3$	Max	28.0	18.9	18.8	20.5	20.9	19.3	18.9	20.0
	Min	25.1	15.4	16.0	18.1	18.3	16.1	16.1	17.1
	Avg	26.2	16.9	17.4	19.4	19.6	17.7	17.4	18.5
	98%	28.0	18.9	18.7	20.5	20.8	19.3	18.9	20.0
SO_2 $\mu g/M^3$	Max	26.9	17.9	17.8	19.1	18.2	17.9	17.7	18.9
	Min	24.2	15.1	15.1	16.3	16.0	15.1	14.9	16.1
	Avg	25.6	16.4	16.4	18.0	17.1	16.4	16.3	17.5
	98%	26.9	17.9	17.8	19.1	18.2	17.9	17.7	18.9
NOx $\mu g/M^3$	Max	30.9	19.3	19.6	21.9	21.8	19.9	20.9	21.0
	Min	27.0	16.2	16.8	19.1	18.7	17.1	17.2	18.4
	Avg	29.1	17.8	18.2	20.4	20.5	18.4	18.5	19.7
	98%	30.7	19.3	19.6	21.9	21.8	19.9	20.4	21.0
CO mg/M^3	Max	0.90	0.10	0.10	0.10	0.10	0.10	0.10	0.10
	Min	0.10	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Avg	0.47	0.06	0.06	0.05	0.06	0.05	0.05	0.05
	98%	0.90	0.10	0.10	0.10	0.10	0.10	0.10	0.10

Notes: PM10, $PM_{2.5}$, SO_2 and NO_x are computed based on 24 hourly values., CO is computed based on 8 hourly values.

Table 20 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		NOx 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 21 Monitoring Locations for Surface Water

Station Code	Name of the Station	Type	Distance from Site; Km	Direction from Site	Justification
SW1	Turk Pimpari	Nala	2.74	NNE	Upstream of Nala
SW2	Kewad	Nala	0.61	NW	Midstream of Nala
SW 3	Mangaon	Nala	2.98	SSW	Downstream of Nala
SW 4	Undargaon	River	4.31	W	Upstream of Sina River
SW5	Wakav	River	5.07	SSW	Midstream of Sina River After confluence of Nala 1 Km
SW6	Khairao	River	7.52	SSW	Downstream of Sina River

Table 22 Monitoring Locations for Ground Water

Station Code	Name of the Station	Type	Geographical Location	Distance from Site Km	Direction from Site
GW1	Kewad	Dug Well	18°1'20.74"N, 75°36'38.72"E	1.24	W
GW2	Manegaon	Dug Well	18°1'12.87"N, 75°37'5.15"E	0.57	SW
GW3	Turk pimpari	Dug Well	18°1'15.26"N,75°37'13.15"E	0.34	W
GW4	Turk pimpari	Dug Well	18°1'15.91"N, 75°37'25.76"E	0.28	E
GW5	Turk pimpari	Dug Well	18°1'39.22"N, 75°37'22.91"E	0.49	N
GW6	Turk pimpari	Dug Well	18° 1'43.16"N, 75°37'9.24"E	0.69	NNW
GW7	Turk pimpari	Dug Well	18° 1'36.43"N, 75°37'6.14"E	0.59	NW
GW8	Turk pimpari	Dug Well	18° 1'34.90"N, 75°37'8.83"E	0.50	NW
GW9	Turk pimpari	Dug Well	18° 1'19.89"N, 75°37'11.68"E	0.30	W

Results observed after monitoring ground water and surface water are mentioned in chapter 3 of 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. Four zones viz. Residential, Commercial, Industrial and Silence Zones have been considered for noise monitoring. Some of the major material roads were covered to assess

the noise due to traffic. Noise monitoring was undertaken for 24 hours at each location. Details of noise monitoring stations are given in following table-

Table 23 Noise Sampling Locations

Station Code	Name of the Sampling Point	Distance from Site, Km	Direction from Site
N1	Site	-	-
N2	Turkpimpri	2.3	NEN
N3	Malwandi	4.8	NE
N4	Kapsewadi	4.4	E
N5	Manegaon	4.8	SE
N6	Vakav	4.9	SW
N7	Kevad	3.8	WNW
N8	Jamgaon	4.0	NWN

Table 24 Ambient Noise Levels

Sr. No.	Location	Average Noise Level in dB(A)					
		L_{10}	L_{50}	L_{90}	$L_{eq(day)}$	$L_{eq(night)}$	L_{dn}
1	N1	53.0	57.1	58.3	64.4	51.4	63.5
2	N2	43.6	46.7	48.2	51.6	42.7	52.0
3	N3	41.7	45.0	47.6	51.2	40.0	50.8
4	N4	41.4	46.3	47.6	52.5	41.6	52.2
5	N5	41.5	42.9	45.6	46.9	39.7	48.2
6	N6	42.8	46.5	47.6	52.0	42.1	52.1
7	N7	41.1	44.6	46.7	51.4	39.2	50.7
8	N8	41.2	43.9	46.7	49.8	39.4	49.7

G. Socio-Economic Profile

Socio-economic status of the population is an indicator for the development of the region. Any developmental project of any magnitude will have a bearing on the living conditions and on the economic base of population in particular and the region as a whole. Chapter 3 may be referred for details of this aspects.

H. Ecology

Ecological survey for expansion project by BSSAIL was carried by questionnaire study in 3 representative village from 10 KM radius. 28 villages within the radius of 10 km from the site coming under Barshi and Madha talukas.

8) 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 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.

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: The 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.). The 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 of EIA may be referred.

9) ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

A. Impact on Topography

No major topographical changes are envisaged in the acquired area as it is expansion of Sugar, Co-gen & Distillery project. In acquired area, the changes would be due to the manmade structures, like Distillery structure and ancillary units. 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 expansion 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 98th percentile concentrations of PM_{10}, $PM_{2.5}$, SO_2 and NOx in Ambient Air, recorded during the field study conducted for the season **October-November-December 2021** are considered as baseline values. They represent impact due to operations of existing nearby industries on this region. Existing baseline concentrations are summarized in following table and the GLC of the same is included in 4th chapter of EIA report.

Table .25 Baseline Concentrations (98 Percentile)

Parameter	PM_{10}	$PM_{2.5}$	SO_2	NO_X	CO
Conc. (μg/m^3)	66.9	28.0	26.9	29.1	0.90
NAAQS	100 μg/m^3	60 μg/m^3	80 μg/m^3	80 μg/m^3	4mg/m^3

ii. Air Polluting Sources

A New Boiler of 60 TPH capacity will be installed under expansion of Distillery. Under expansion activity of Sugar Factory & Co-gen plant operations, 35 TPH boiler will be installed. Existing 140 TPH boiler is installed. New two DG set of capacity 500 KVA will be installed under expansion project. Three DG sets of capacity 500 KVA each are installed under existing unit.

D. IMPACT ON WATER RESOURCES

i. Impact on Surface Water Resources& Quality

Total water requirement of for existing & proposed activity taken from Ground water.

Effluent from distillery; Raw Spentwash shall be primarily treated in Multi Effect Evaporator (MEE). Concentrated spentwash will be forwarded to Incineration. Other Effluents viz. spent lees, Boiler blow down, cooling tower, and lab; washing, DM backwash is forwarded to CPU.

Treated effluent shall be used in process to achieve ZLD. Total domestic effluent would be treated in proposed STP. Hence there will not be any impact on surface water resource. More details about water budget are presented at Chapter 2.

ii. Impact on Ground Water Resources & Quality

Requirement for fresh water will be met from ground water. NOC is procured from CGWA for extraction of ground water. 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 existing sugar factory as mentioned above, there will not be discharge of any untreated effluent on land. ESP are installed to existing boilers. Boiler ash from existing boiler is Utilization in Brick making Plant in own premises. Hence, there will not be any major increase in chemical constituents of soil through deposition of air pollutants/ discharge of waste water. Moreover, there will not be any process emissions worth mentioning, the impact on the soil characteristics will be nil.

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. BSSAIL is not 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 sugar factory, Co-gen Plant & Distillery have already been established. Proposed expansion project would be implemented in existing premises BSSAIL. 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 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, industry is going to contribute in SPM pollution load in nearby area. This may have negative impact particularly on avifauna, surrounding crop yields & local population. Details in respect of impacts on ecology and biodiversity are described in Chapter 3.

I. IMPACT ON HISTORICAL PLACES

No historical places in study area. No major impact was observed during site visit.

10) SALIENT FEATURES OF EMP

Following routine monitoring program as detailed in Table 27 shall be implemented at site. Besides to this monitoring, the compliances to all Environmental Clearance conditions and regular permissions from CPCB /MoEFCC shall be monitored and reported periodically.

Table 26 Plan for Monitoring of Environmental Attributes in and around BSSAIL

No.	Description	Location	Parameters	Frequency	Conducted by
1	Ambient Air Quality	Upwind-1, Downwind-2 (Near Cane Yard, Near Main ETP, Near Colony.)	PM_{10}, $PM_{2.5}$, SO_2, NOx, CO	Monthly	MoEFCC & NABL Approved External Lab
		Study area - (Villages namely – Hatkarwadi, Kapshewadi, Kevad, Undargaon, Jamgaon, Kadamvasti, Turk-Pimpri		Quarterly	
2	Work Zone Air Quality	4 Locations (Mill section, Sugar bagging section, Distillation Section)	PM_{10}, $PM_{2.5}$, SO_2, NOx, CO	Monthly	
3	Stack Emissions	Boiler – 3 Nos. (Existing boiler & Proposed Boiler), D.G Sets- 5 Nos.	SPM, SO_2, NOx	Monthly	
4	Fugitive Emissions	Ethanol storage area & Distillation column	VOC	Monthly	
5	Ambient Noise	5 Locations (Near main gate, Near ETP, near Sugar godown, Distillation Section)	Spot Noise Level recording; Leq(n), Leq(d), Leq(dn)	Monthly	
	Work zone Noise	Premises – 5 Nos (Mill section, Boiler, DG set, Turbine section)		Monthly	
6	Effluent	Treated, Untreated	pH, SS, TDS, COD, BOD, Chlorides, Sulphates, Oil & Grease.	Monthly	
7	Drinking water	Factory Residential Colony	Parameters as per drinking water Std IS:10500	Monthly	
8	Soil	8 locations within 5 Km (Villages- Turk pimpari, Wakav, Manegaon, Malwandi, Undergaon, Madha, Surdi, Bople	pH, Salinity, Organic Carbon, N, P, K	Quarterly	
9	Water Quality (Ground Water & Surface Water)	Locations in study area – (8 Ground Water locations)	Parameters as per CPCB guideline for water quality monitoring – MINARS/27/2007-08	Quarterly	
10	Waste management	Implement waste management plan that Identifies and characterizes every waste associated with proposed activities and which identifies the procedures for collection, handling & disposal of each waste arising.	Records of Solid Waste Generation, Treatment and Disposal shall be maintained	Twice in a year	By **BSSAIL**

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

भगवानराव शिंदे साखर अलाईड उद्योग लिमिटेड
तुर्कपिंपरी , ता.आणि जि.सोलापूर ,महाराष्ट्र
यांच्या
प्रस्तापित साखर कारखान्याची गाळप क्षमता 5000 ते 12000 टन प्रतिदिन तसेच 25 ते 60 मे.वॅट क्षमतेचा पीज निर्मिती प्रकल्प आणि 60 ते 200 के.एल.पी.डी. मोलॅसिस आधारित /केन ज्युस वर आधारित आसवनी प्रकल्प यांच्या विस्तारिकरणाबाबतच्या
इन्व्हायरमेंट इंपॅक्ट असेसमेंट अहवालाचा सारांश

1) प्रकल्पाविषयी थोडक्यात

भगवानराव शिंदे साखर अलाईड उद्योग लिमिटेड यांचा प्रकल्प तुर्कपिंपरी ,ता.आणि जि.सोलापूर , महाराष्ट्र राज्य येथे उभारणेत आलेला आहे.कारखान्याचे भौगोलिक स्थान 18°01'26.06"N अक्षांश आणि 75°37'20.57"E रेखांश आहे. भ.शिं.सा अ.उ.लि च्या व्यवस्थापनाने 5000 ते 12000 टन प्रतिदिन गाळप क्षमता असलेला साखर कारखाना तसेच 25 ते 60 मे.वॅट क्षमतेचा पीज निर्मिती प्रकल्प आणि 60 ते 200 के.एल.पी.डी.मोलॅसिस आधारित / केन ज्युस वर आधारित आसवनी प्रकल्प विस्तारिकरण करणेचे नियोजन केले आहे.

इंडियन शुगर मॅन्युफॅक्चर कंपनी लिमिटेड या नावाने 27 ऑक्टोबर 2015 रोजी MoEFCC, नवी दिल्ली कडुन इन्वायरमेंन्ट क्लियरन्स मिळाला असून त्याचा क्र. J.11011/68/2013 IA II(I) आहे. सदर साखर कारखान्याचा प्रथम गळीत हंगाम सन 2016 - 17 मध्ये भगवानराव शिंदे साखर अलाईड उद्योग लिमिटेड या नावाने घेणेत आला होता. 7 डिसेंबर 2017 ला इंडियन शुगर मॅन्युफॅक्चर कंपनी लिमिटेड चे नाव बदलून भगवानराव शिंदे साखर अलाईड उद्योग लिमिटेड असे इन्वायरमेंन्ट क्लियरन्स मध्ये दुरुस्ती करुन घेतले.पजाचा क्र. J.11011/68/2013 IA II (I) आहे.महाराष्ट्र प्रदूषण मंडळ कडून साखर कारखाना आणि पीज निर्मिती साठी कन्सेट टू ऑपरेट मिळाले आहे. परंतु काही अथिक संकटांमुळे 60 के.एल.पी.डी आसवनी प्रकल्पाची अजून कार्यान्वित करणे बाकी आहे. आता व्यवस्थापनाने EBP -2018 अंतर्गत बायोइथेनॉलची राष्ट्रीय मागणी पुर्ण करण्यासाठी आसवनीची क्षमता 60 के.एल.पी.डी वरुन 200 के.एल.पी.डी इथेनॉल उत्पादन करण्याचा निर्णय घेतला आहे. सदर प्रकल्प हा दि. 14.09.2006 च्या इन्वायरमेंन्ट इंपॅक्ट असेसमेंन्ट (EIA) नोटीफिकेशन नं. स. ओ. 1533 (ई) व 13 जून 2019 च्या नोटीफिकेशन मधील तरतुदीनुसार कॅटॅगरी ए मध्ये येतो. प्रस्तावित प्रकल्प राबविताना सुरक्षिततेचे नियम व पर्यावरणाचे संरक्षण करण्याच्या सर्व गोष्टींची खबरदारी घेतली जाईल. खालील तक्त्यामध्ये गुंतवणुकीचे तपशील दिलेले आहेत.

तक्ता 1 गुंतवणुक

क्र.	तपशील	भांडवली गुंतवणुक (रू.कशेडमध्ये)		
		सध्याची	प्रस्तावित	एकुण
1	साखर कारखाना	116.0	175.0	291.0
2	आसवनी प्रकल्प	24.51	155.0	179.51
3	सहपीज प्रकल्प	85.0	168.0	253.0
	एकुण	225.51	498.00	723.51

2) प्रकल्पाची जागा

भ.शिं.सा.अ.उ.लि.द्वारे तुर्कपिंपरी,ता.आणि जि.सोलापूर , महाराष्ट्र येथे 37.05 हेक्टर एवढी जागा संपादित केली आहे. प्रस्तापित प्रकल्पाचे बांधकाम क्षेत्र 11.98 हे. एवढे असेल. जागेसंदर्भातील माहिती तक्ता 2 मध्ये आहे. ई.आय.ए रिपोर्टच्या अॅनेक्षर अ ला प्लॉट लेआउट लावले आहे.

तक्ता 2 विविध विभागांच्या क्षेत्राचा तपशील

क्र.	तपशील	सध्याचा	प्रस्तापित	एकूण
1	**एकुण क्षेत्र**	**3,70,528**		**3,70,528**
2	साखर कारखाना व सहवीज प्रकल्प	**28,854**	**71,000**	**99,854**
	आसवनी प्रकल्प	-	**20,000**	**20,000**
	एकुण बांधकाम क्षेत्र	**28,854**	**91,000**	**1,19,854**
3	वाहनतळ क्षेत्र	**51654**	**24000**	**75654**
		14%	**6%**	**20%**
4	रोड अंतर्गत क्षेत्र	**13,608**	**1,743**	**15,351**
5	हरित पट्टा	**38,302**	**85000**	**1,23,302**
		10%	**23%**	**33%**
6	खुले क्षेत्र	**2,38,110**		**36,367**

3) प्रकल्प प्रवर्तकांची ओळख

ब.शिं.सा.आ.क.लि च्या प्रवर्तकांना साखर कारखाना, सहवीज निर्मिती व आसवनी प्रकल्प क्षेत्रामधील चांगला अनुभव आहे. प्रवर्तकांनी प्रस्तावित विस्तारीकरण प्रकल्पाचे नियोजन तसेच अंमलबजावणी योजनेचा सखोल अभ्यास केला आहे. प्रकल्प प्रवर्तकांचे नाव आणि हुद्दा खालीलप्रमाणे

तक्ता 3 प्रवर्तकांचे नाव व हुद्दा

क्र.	प्रवर्तकाचे नाव	हुद्दा
1	श्री.संतोश व्यंकटेश गरड	संचालक
2	श्री.रविंद्र सुरेश शिंदे	संचालक
3	श्री.महेश लक्ष्मन बाळसराफ	संचालक
4	श्री.कैलास बाबासाहेब मते	जनरल मॅनेजर

4) उत्पादनांविषयी माहिती

ब.शिं.सा.आ.क.लि यांच्या सध्याच्या आणि प्रस्तापित प्रकल्पामध्ये तयार होणारी उत्पादने व त्यांचे परिमाण खालीलप्रमाणे आहे.

तक्ता 4 उत्पादने व उपउत्पादनांचा तपशिल

प्रकल्प	उत्पादने व उपउत्पादनांची नावे	क्षमता (मे.टन/म.)		
		सध्याची	प्रस्तावित	एकूण
साखर कारखाना (5000-12000 टन प्रतिदिन	**उत्पादने**			
	साखर (12%)	**18,150**	**25,050**	**43,200**
	उपउत्पादनांची			
	मोलॅसिस (5%)	**7500**	**10,500**	**18,000**
	बगॅस (30%)	**45,000**	**63,000**	**1,08,000**
	प्रेसमड (4%)	**3,000**	**4,200**	**7,200**
कॅप्टिव पॉवर प्लांटची	वीज (मे.वॅट)	**25**	**35**	**60**
आसवनी (60-200 कि.लि. प्रतिदिन)	**उत्पादने**			
	इथेनॉल / आर.एस. / ई.एन.ए. (कि.लि.प्रतिदिन)	**1800**	**4200**	**6000**
	उपउत्पादनांची			
	फ्युजल ऑईल	**3.3**	**7.7**	**11**
	कार्बनडाय ऑक्साइड	**1500**	**3480**	**4980**

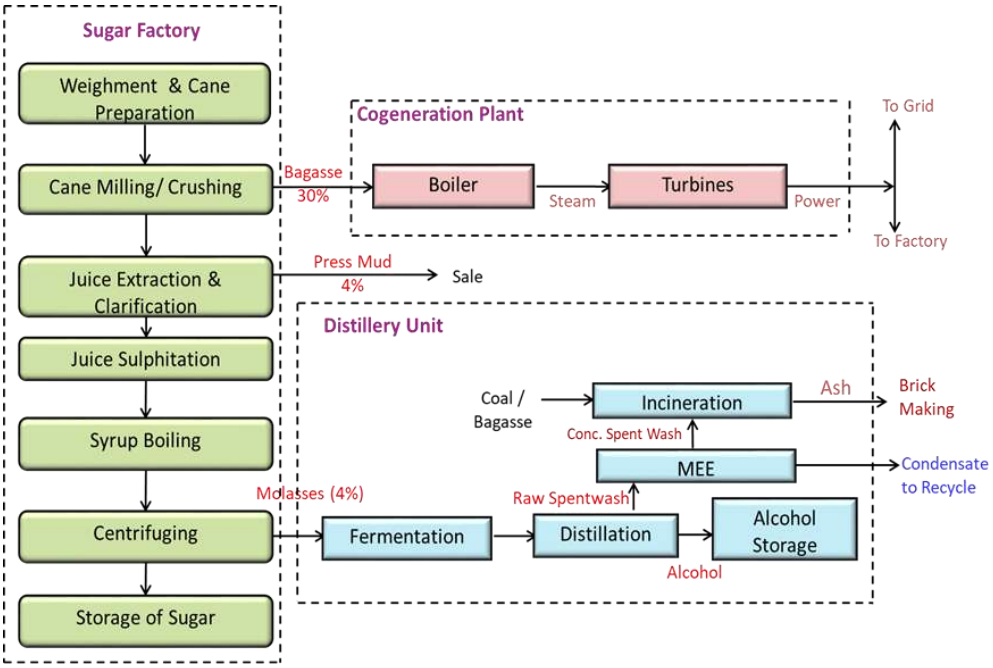
* उस गाळपाच्या टक्केवारीत

5) प्रकल्पाचे उद्दिष्ट

अल्कोहोल उद्योगाची देशाच्या अर्थव्यवस्थेमधे महत्वाची जागा आहे. अल्कोहोल हे खुप रसायनांमध्ये कच्चा माल म्हणुन वापरले जाते. उत्पादन, वापर, कच्चा माल सुलभतेने उपलब्ध होण्यामुळे आसवनी प्रकल्प व्यवसाय अधिक महत्वाचा ठरत आहे. त्याशरोबरच या व्यवसायामुळे सरकारला मोठया प्रमाणात अबकारी कर वसुल होतो. अल्कोहोलचा वापर पॉवर अल्कोहोल म्हणून पेट्रोलमध्ये करता येऊ शकतो. तसेच जपान, यु.एस.ए., कॅनडा, श्रीलंका, इ. देशांमध्ये पेट/ोलियम कुड पासुनच्या नॅप्थापासुनचे सिंथेटिक अल्कोहोल सिप्हरेजीसाठी उपयुक्त नसलेने या देशांमधे फरमेंटेड अल्कोहोलला खुप मोठया प्रमाणामध्ये मागणी आहे. उपरोक्त बाबीं लक्षात घेऊन म.शिं.सा.आ.ऊ.लि च्या व्यवस्थापनाने आसवनी प्रकल्पाचे प्रस्तावित करण्याचे ठरविले आहे.

6) उत्पादन प्रक्रिया

आकृती 1 उत्पादन प्रक्रिया



7) पर्यावरणविषयक दृष्टिकोन

म.शिं.सा.आ.ऊ.लि यांनी अत्यंत प्रभावी व परिणामकारक अशी पर्यावरण व्यवस्थापन योजना (EMP) राबविणेचे नियोजन केले आहे. त्यातील विविध घटक खालील प्रमाणे

अ) पाण्याचा वापर, सांडपाण्याची निर्मिती व त्याची प्रक्रिया

- **पाण्याचा वापर**

म.शिं.सा.आ.ऊ.लि यांच्या सध्याच्या व प्रस्तावित प्रकल्पामध्ये होणा-या पाण्याच्या वापराविषयी सविस्तर तपशील खालीलप्रमाणे -

प्रस्तावित आसवनी प्रकल्पाला एकूण 2326 घनमीटरदिन इतके पाणी लागेल. यापैकी 536 घन मी. प्रतिदिन इतके पाणी भूजल मधुन घेतले जाईल, 376 घन मी. प्रतिदिन हे आसवनी प्रकल्पाच्या झी.पी.यु. कंडेनसेट केलेले पाणी व 1590 घन मी. प्रतिदिन हे आसवनी प्रकल्पाच्या झी.पी.यु. मध्ये प्रकिया केलेले पाणी घेतले जाईल.116 घन मी.प्रतिदिन हे जादा कंडेनसेट पाणी.
साखर कारखाना व सहवीज प्रकल्पांसाठी साठी एकूण 6417 घन मी.प्रतिदिन इतके पाणी लागते.यापैकी 25 घन मी.प्रतिदिन इतके पाणी भूजल मधुन घेतले जाईल.5765 घन मी.प्रतिदिन इतके ऊसामधील कंडेनसेट घेतले जाईल. 582 घन मी.प्रतिदिन इतके पाणी घरगुती सांडपाणी प्रकिया आणि औद्योगिक सांडपाणी प्रकल्पात प्रकिया केलेले असेल.

तक्ता क्र.5 साखर कारखाना व सहवीज निर्मिती प्रकल्पामध्ये लागणारे पाणी
(घनमीटर/दिन)

क्र.	तपशील	साखर कारखाना (5,000 टीसीडी) व सहवीज निर्मिती प्रकल्प (25 मे.वॅट)	साखर कारखाना (12,000 टीसीडी) व सहवीज निर्मिती प्रकल्प (60 मे.वॅट)
1	**घरगुती**	$^{\#}25$	36 ($^{\#}25+ {}^{\$}11$)
2	**औद्योगिक**		
	प्रोसेस	$^{*}1765$	$^{*}4271$
	कुलिंग	$^{*}450$	$^{*}1080$
	बॉयलर मेकअप	$^{*}240$	$^{*}336$
	डी.एम. बॅकवॉश	$^{*}48$	$^{*}67$
	लॅब व वॉशिंग	$^{*}3$	$^{*}6$
	ब्रॅश क्वेंचिंग	$^{*}2$	$^{*}5$
	औद्योगिक वापर	$^{*}2508$ (100 % पुनर्वापर)	$^{*}5765$ (100 % पुनर्वापर)
3	हरितपट्टा	$^{\$}200$	616 ($^{\$}571+{}^{\Omega}45$)
	एकूण	2733 ($^{*}2508+{}^{\#}25+{}^{\$}200$)	6417 ($^{*}5765 +{}^{\#}25+ {}^{\$}582+{}^{\Omega}45$)
	पाण्याचा वापर (100 ली./मे.टन ऊस)	0	0

टीप : $^{\#}$एकुण पाणी भूजल वापरले जाईल. ,* शामधून निघणारे कंन्डेंसेट पाणी, $ शांडपाणी प्रकिया प्रकल्पातून प्रकिया केलेले पाणी जे फ्लशिंगसाठी वापरले जाईल, Ω येन वॉटर हार्वोस्टिंग.

तक्ता 6 आसवनी प्रकल्पामधील पाण्याचा वापराविषयी सविस्तर तपशील

क्र.	तपशील	प्रस्तावित 60 कि.लि. प्रतिदिन		प्रस्तावित 200 कि.लि. प्रतिदिन		
				मोलॅसिस आधारित		
		गळित हंगाम	विना गळित हंगाम	गळित हंगाम	विना गळित हंगाम	केन ज्युस
1	घरगुती	$^{\#}5$	$^{\#}5$	$^{\#}18$	$^{\#}18$	$^{\#}18$
2	औद्योगिक					
	प्रोसेस	$^{\clubsuit}$ 477	$^{\clubsuit}$ 477	$^{\clubsuit}1590$	$^{\clubsuit}1590$	-
	कुलिंग ब्लोडाऊन	180 ($^{*}170+ {}^{\clubsuit}10$)	180 ($^{\#}170+ {}^{\clubsuit}10$)	$^{*}600$	600 ($^{*}82+{}^{\#}518$)	$^{\emptyset}600$
	बॉयलर ब्लोडाऊन	$^{*}53$	$^{\#}53$	$^{*}84$	$^{\#}84$	$^{\emptyset}84$
	डि.एम.बॅकवॉश	$^{*}11$	$^{\#}11$	$^{*}17$	$^{*}17$	$^{\emptyset}17$
	लॅब वॉशिंग	$^{*}3$	$^{\#}3$	$^{*}10$	$^{*}10$	$^{\emptyset}10$
	ब्रॅश क्वेंचिंग	$^{*}3$	$^{\#}3$	$^{*}7$	$^{*}7$	$^{\emptyset}7$
	औद्योगिक वापर	727 ($^{\clubsuit}487+{}^{*}240$) 100 % पुनर्वापर	727 ($^{\clubsuit}$ 477+$^{\#}240$) 65 % पुनर्वापर	2308 ($^{\clubsuit}$ 1590 + $^{*}718$) 100 % पुनर्वापर	2308 ($^{\clubsuit}1590 +{}^{*}116+{}^{\#}518$) 80 % पुनर्वापर	$^{\emptyset}718$ 100 % पुनर्वापर
	एकूण	732 ($^{\clubsuit}487+{}^{*}240+{}^{\#}5$)	732 ($^{\clubsuit}487+{}^{\#}245$)	2326 ($^{\clubsuit}1590+{}^{\#}18+{}^{*}718$)	2326 ($^{\clubsuit}$ 1590+$^{*}116+{}^{\#}536$)	736 ($^{\emptyset}$ 718+$^{\#}18$)
	पाण्याचा वापर (10 की. ली. /10 की. ली. अल्कोहोल)	0 KL/KL	4 KL/KL	0 KL/KL	2.7 KL/KL	0 KL/KL

टीप : $^{\#}$एकुण पाणी भूजल वापरले जाईल ,* शामधून निघणारे कंन्डेंसेट पाणी, ♣ आसवनी सी.पी.यु.मधुन प्रकिया केलेले पाणी

तक्ता 7 साखर कारखाना सहवीज प्रकल्पांचे सांडपाणी

क्र.	तपशील	सांडपाणी (घनमीटर/दिन)		प्रक्रिया
		सध्याचा	विस्तारिकरणानंतर	
1	**घरगुती**	20	30	प्रस्तावित घरगुती सांडपाणी प्रकीया प्रकल्पात प्रकिया केले जाईल.
2	**औद्योगिक**		3	
	प्रोसेस	212	513	प्रस्तावित साखर कारखान्याच्या औद्दयोगिक सांडपाणी प्रकिया प्रकल्पात प्रक्रीया केली जाईल.
	कुलिंग	45	108	
	बॉयलर मेकअप	48	67	
	डी.एम. बॅकवॉश	48	67	
	लॅब व वॉशिंग	3	6	
	ब्रॅश क्वेंचिंग	0	0	
	एकूण	356	761	
	सांडपाण्याचा पापर (200ली./मे.टन ऊस)	71 ली. /मे.टन	63 ली. /मे.टन	

तक्ता 8 आसवनी प्रकल्पाचे सांडपाणी

क्र.	तपशील	प्रस्तावित 60 कि.लि. प्रतिदिन	प्रस्तापित 200 KLPD		प्रक्रिया
			मोलॅसिस	केन ज्युस	
1	घरगुती	4	14	14	प्रस्तावित घरगुती सांडपाणी प्रकिया प्रकल्पामध्ये (एस.टी.पी.) प्रकियीत केले जाईल.
2	औद्योगिक				
	प्रोसेस	वॉ स्पेंटवॉर्श 480 कॉन्स. स्पेंटवॉर्श 96	वॉ स्पेंटवॉर्श – 1600 कॉन्स. स्पेंटवॉश -320	वॉ स्पेंटवॉर्श – 800 कॉन्स. स्पेंटवॉश -160	वॉ स्पेंटवॉश हे MEE मध्ये कॉसनट्रेट केले जाते आणि कॉ. स्पेंटवॉश इनसिनरेशन बॉयलर मध्ये ज्वलनासाठी पाठविला जाते
		MEE कंडेनसेट –384	MEE कंडेनसेट - 1280	MEE कंडेनसेट - 640	सर्व सांडपाणी प्रस्तावित कंडेनसेट पॉलिशिंग युनिटमध्ये प्रकियीत केले जाईल व त्याचा पुर्नवापर केला जाईल
		स्पेंट लीस –83	स्पेंट लीस –278	स्पेंट लीस –176	
	कुलिंग ब्लोडाऊन	27	90	90	
	बॉयलर ब्लोडाऊन	11	17	17	
	डि.एम.बॅकवॉश	11	17	17	
	लॅब वॉशिंग	3	10	10	
		इतर सांडपाणी 52	इतर सांडपाणी 134	इतर सांडपाणी 134	

क्र.	तपशील	प्रस्तावित 60 कि.लि. प्रतिदिन	प्रस्तापित 200 KLPD		प्रक्रिया
			मोलॅसिस	केन ज्युस	
	एकूण	इतर सांडपाणी – 519	इतर सांडपाणी – 1692	इतर सांडपाणी – 950	
		कॉन्स. स्पेंटवॉश –96	कॉन्स. स्पेंटवॉश –320	कॉन्स. स्पेंटवॉश –160	

ब. सांडपाणी प्रक्रिया

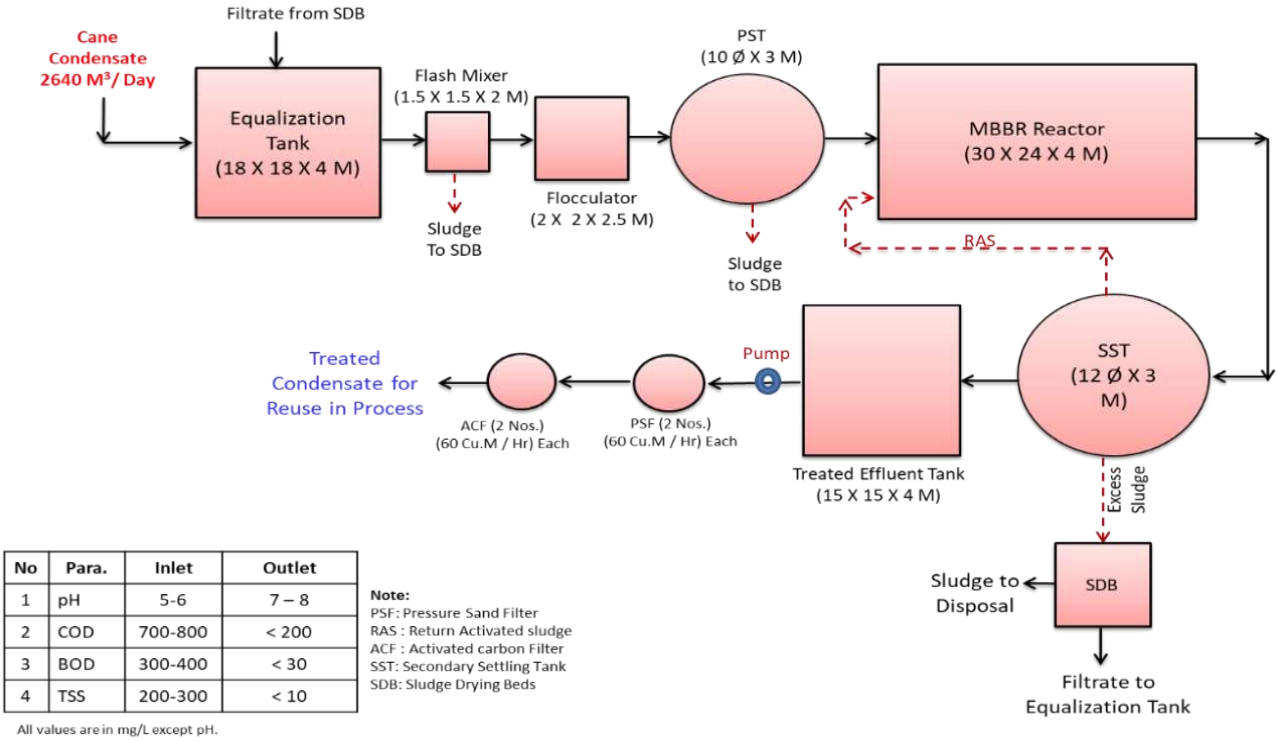
1. घरगुती सांडपाणी

ब.शिं.सा.आ.क.लि प्रकल्पामधील साखर कारखाना, सहवीज आणि आसवनी मधुन एकुण 24 घन मीटर प्रति दिन इतके घरगुती सांडपाणी तयार होईल.तयार होणा-या एकुण घरगुती सांडपाण्यावर प्रस्तावित सांडपाणी प्रक्रिया केंद्रामध्ये(STP) मध्ये प्रक्रिया केले जाईल.

2. औद्योगिक सांडपाणी

साखर कारखान्यातून निघणारे एकुण सांडपाणी 336 घन.मी प्रतिदिन हे औद्योगिक सांडपाणी 500 घन.मी.प्रतिदिन प्रकल्पात प्रक्रिया करून त्याचा पुर्नवापर केला जाईल. प्रस्तापित साखर कारखान्यातून 761 घन.मी.प्रतिदिन प्रक्रिया केलेले पाणी हरितपटटा विकासासाठी वापरले जाईल. प्रस्तावित आसवनी प्रकल्पामधून स्पेंटवॉश 1600 घन.मी.प्रतिदिन तयार होते. स्पेंटलीज,मधील एम.ई.ई.मधील कंडेनसेट ल 360 घन.मी.प्रतिदिन इतके तयार होणारे स्पेंटवॉश बॉयलर मध्ये इनसिनरेट करतो.स्पेंटलीज 278 घन.मी प्रतिदिन MEE कंडेनसेट -1280 घन.मी.प्रतिदिन व इतर सांडपाणी 134 घन.मी.प्रतिदिन CPU मध्ये प्रक्रिया केली जाते.

आकृती 2 साखर कारखाना मधील प्रस्तावित सी.पी.यु.फ्लो चार्ट

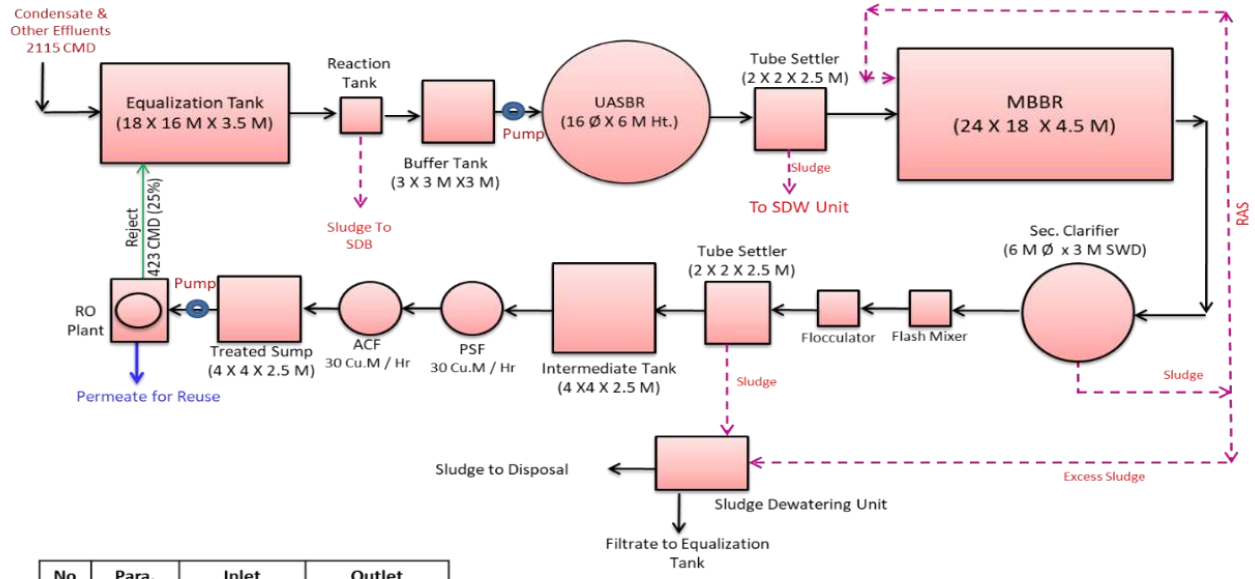


No	Para.	Inlet	Outlet
1	pH	5-6	7 – 8
2	COD	700-800	< 200
3	BOD	300-400	< 30
4	TSS	200-300	< 10

All values are in mg/L except pH.

Note:
PSF: Pressure Sand Filter
RAS : Return Activated sludge
ACF : Activated carbon Filter
SST: Secondary Settling Tank
SDB: Sludge Drying Beds

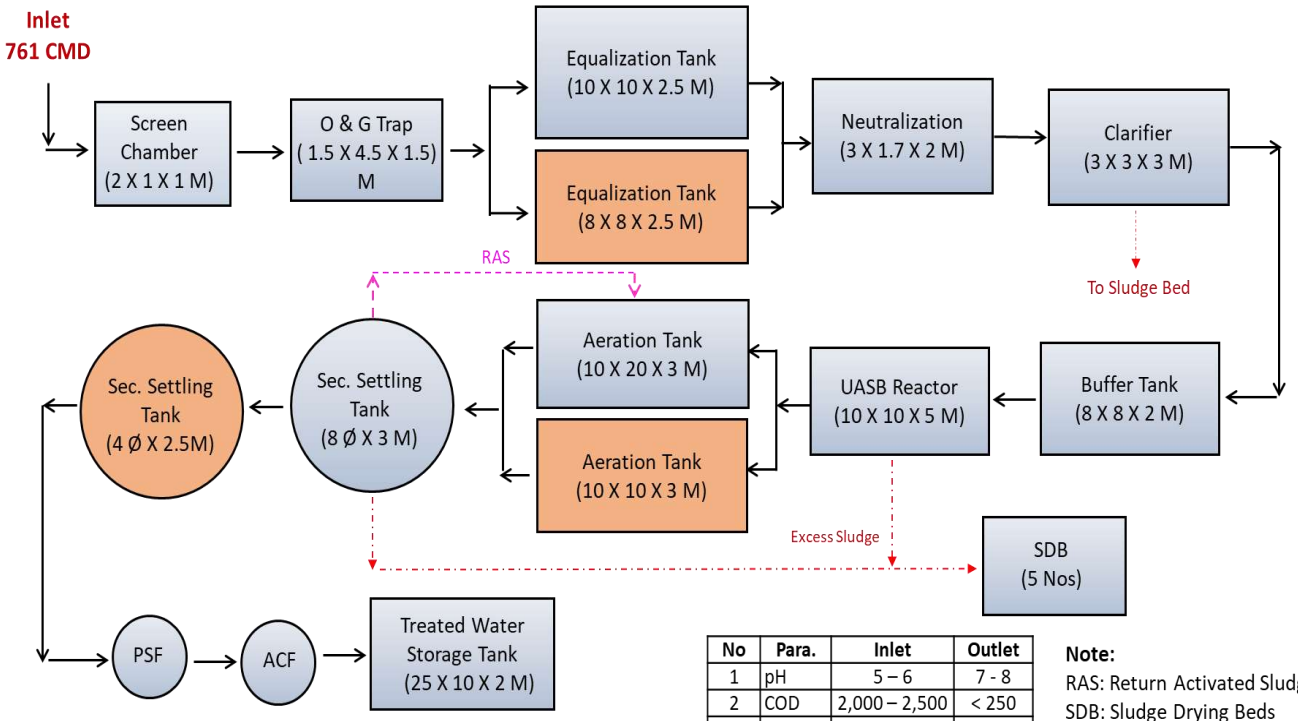
आकृती 3 आक्षेपनी मधील प्रस्तावित सी.पी.यु.फ्लो चार्ट



No	Para.	Inlet	Outlet
1	pH	5-6	7 – 8
2	BOD	2000-2500	< 50
3	COD	3500-4000	< 100
4	TDS	2000-3000	< 100

Note:
PSF: Pressure Sand Filter
ACF : Activated carbon Filter
SST: Secondary Settling Tank
SDW Unit: Sludge Dewatering Unit

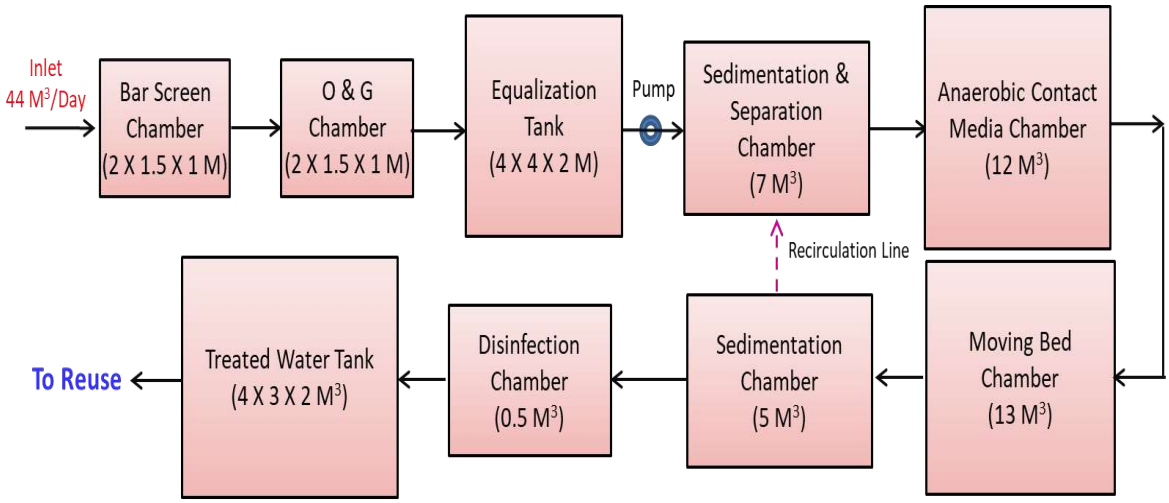
आकृती 4 प्रस्तापित ई.टी.पी.फ्लो चार्ट



No	Para.	Inlet	Outlet
1	pH	5 – 6	7 - 8
2	COD	2,000 – 2,500	< 250
3	BOD	1,000 – 1,500	< 100
4	TDS	1,800 – 2,200	< 2,100
5	SS	250 – 300	<100

Note:
RAS: Return Activated Sludge
SDB: Sludge Drying Beds
PSF: Pressure Sand Filter
ACF : Activated Carbon filter

आकृती 5 प्रस्तापित एस्.टी.पी.फ्लो चार्ट



No	Parameter	Unit	Inlet	Outlet
1	pH	---	6.0 – 8.5	6.0 – 8.5
2	COD	mg/lit	400 – 500	< 50
3	BOD	mg/lit	250 – 300	< 10
4	TSS	mg/lit	150 - 250	< 30
5	O & G	mg/lit	20 - 30	< 10

अ. वायु उत्सर्जने

प्रस्तापित आसवनी प्रकल्पामध्ये 35 टन प्रति तास क्षमतेचा बॉयलर उभारणेत येणार आहे. ज्यासाठी बगॅस (233 मे.टन/दिन) / कॉन्स. स्पेंटवॉश (216 मे.टन/दिन) इंधन म्हणून वापरले जाईल. या बॉयलरला ई.एस.पी. हे प्रदूषण नियंत्रक उपकरण व 65 मी. उंचीची चिमणी असवली जाईल.
सध्याच्या साखर कारखान्याअंतर्गत 140 टन प्रति तास, क्षमतेचे बॉयलर कार्यरत आहेत.ज्यासाठी बगॅस इंधन म्हणून वापरले जाते. या बॉयलरना ई.एस.पी. हे प्रदूषण नियंत्रक उपकरण असवले आहे. प्रदूषण नियंत्रण करण्यासाठी बॉयलरना 65 मी.उंचीची चिमणी असवली आहे. प्रस्तापित साखर कारखान्याअंतर्गत 60 टन प्रति तास, क्षमतेचे बॉयलर कार्यरत आहेत.ज्यासाठी बगॅस इंधन म्हणून वापरले जाते. या बॉयलरना ई.एस.पी. हे प्रदूषण नियंत्रक उपकरण असवले आहे.
सध्याच्या साखर कारखान्याअंतर्गत 500 के.व्ही.ए. क्षमतेचा नवीन 3 डी.जी.सेट असविला आहे.प्रस्तापित प्रकल्पामध्ये 500 के.व्ही.ए. क्षमतेचा नवीन 2 डी.जी.सेट असविला जाईल.हवा प्रदुषण व त्यासंबंधीच्या इतर बाबींची माहीती खालील तक्त्यात दिली आहे.

तक्ता 9 बॉयलर आणि चिमणीचा तपशील

क्र.	तपशील	साखर कारखाना आणि पीज निर्मिती प्रकल्प		आसवनी
चिमणी जोडली आहे		बॉयलर (सध्याचा)	बॉयलर (प्रस्तावित)	बॉयलर (प्रस्तावित)
1	क्षमता	140 टन/तास	60 टन/तास	35 टन/तास
2	इंधनाचा प्रकार	बगॅस	बगॅस	केंन्स स्पेंटवॉश + कोळसा, बगॅस
3	इंधन (मे.टन/दिन)	1680	720	216 + 93/233
4	चिमणीची उंची (मीं)	65	60	65
5	बांधणीसाठी वापरलेले मटेरीयल	आर.सी.सी	आर.सी.सी	आर.सी.सी
6	आकार (गोल/चौरस)	गोल	गोल	गोल

क्र.	तपशील	साखर कारखाना आणि पीज निर्मिती प्रकल्प		आसवनी
चिमणी जोडली आहे		बॉयलर (सध्याचा)	बॉयलर (प्रस्तावित)	बॉयलर (प्रस्तावित)
7	व्यास (मी)	5	2	2
8	चिमणीला असलेले प्रदूषण नियंत्रणाचे उपकरण	ई.एस.पी.	ई.एस.पी.	ई.एस.पी.

तक्ता 10 डी.जी.सेट तपशील

क्र.	तपशील	साखर कारखाना आणि पीज निर्मिती प्रकल्प		आसवनी
चिमणी जोडली आहे		सध्याचा डी.जी.सेट	डी.जी.सेट (प्रस्तावित)	डी.जी.सेट (प्रस्तावित)
1	क्षमता	500 के.व्ही.ए 3 नं	500 के.व्ही.ए	500 के.व्ही.ए
2	इंधनाचा प्रकार	डिझेल	डिझेल	डिझेल
3	इंधन(मे.टन/दिन)	900 लि.(प्रत्येकी)	900 लि.	900 लि.
4	चिमणीची उंची (मीं)	7.31	7.31	7.31
5	बांधणीसाठी वापरलेले मटेरीयल	मेटल	मेटल	मेटल
6	आकार	चौकोन	चौकोन	चौकोन
7	व्यास (मी)	1.82	1.22	1.22
8	चिमणीला असलेले प्रदूषण नियंत्रणाचे उपकरण	कंट्रोल पॅनल	--	--

ब. ध्वनी प्रदुषण

1. ध्वनी निर्माण करणारे स्त्रोत

- आसवनी प्रकल्पामध्ये खुप जास्त आवाज निर्माण करणारे स्त्रोत नसतील. येथील ध्वनीची पातळी 70 डी बी (ए) दरम्यान अपेक्षित आहे. बायलेन्सर आणि पंप्स, मोटर्स व कॉंप्रेसर्स यांची योग्य देखरेख तसेच आवाज कमी होण्यासाठी ध्वनी उगम स्थानाजवळ अटकाव यंत्रणा बसविणेत येइल, इ. प्रकारे आवाजपातळी कमी करण्यासाठी उपाययोजना केल्या जातील.
- फर्मन्टेशन सेक्शन व डिस्टीलेशन सेक्शन हे इतर थोडया प्रमाणात आवाज निर्माण करणारे स्त्रोत असतील येथील ध्वनीची पातळी 70 ते 80 डी बी (ए) दरम्यान अपेक्षित आहे.
- सध्याच्या साखर कारखाना व सहपीज प्रकल्पामध्ये बॉयलर हाऊस, टर्बाइन रूम्स, ऊस गाळप विभाग आणि मील हाऊस इ. आवाज निर्माण करणारे स्त्रोत असतील.
- कारखान्या सभोवती टप्प्याटप्याने हरित पट्टा विकसित केला जाईल जेणेकरून ध्वनी प्रदुषण नियंत्रणास मदत होईल.

2. नियंत्रण उपाय

ध्वनी नियंत्रणासाठी आयसोलेशन, सेपरेशन आणि इन्स्युलेशन तंत्रे वापरली जातील. इअरमफ्स, ई. स्वरूपात कामगारांना वैयक्तीक सुरक्षा साधने (PPE) पुरवण्यात येतील. तसेच ध्वनीची पातळी कमी करण्यासाठी डी. जी. सेट स्वतंत्र कॅनॉपी मध्ये बंदीस्त करण्यात येईल.

अ. घातक स्वरूपाचा कचरा

आसवनी प्रकल्पामधुन कोणत्याही प्रकारचा घातक कचरा निर्माण होणार नाही. साखर कारखान्यामधुन तयार होणारा घातक कचरा तक्ता 11 मध्ये दिला आहे.

तक्ता 11 घातक स्वरूपाचा कचरा तपशील

No.	कच-याचा प्रकार	परिमाण (मे.टन /वार्षिक)		विल्हेवाट पद्धत
		अध्याची	प्रस्तावित	
1	5.1 स्पेंट ऑईल	0.43	1.45	अधिकृत विक्रेता

ब. घन स्वरूपाचा कचरा

तक्ता 12 घन स्वरूप कर्च याचा तपशील

क्र.	प्रकल्प	कच-याचा प्रकार	परिमाण मे.टन /म.		विल्हेवाट पद्धत
			अध्याची	प्रस्तावित	
1	आसवनी	बॉयलरची राख	0.3	0.76	पीट निर्मितीसाठी वापरले जाईल.
		यीस्ट स्लज	42	60	बॉयलर मध्ये जाळले जाईल
		सी.पी.यु. स्लज	28	105	
2	साखर कारखाना	ई.टी.पी. स्लज	13	42	बॉयलर मध्ये जाळले जाईल.
		बॉयलरची राख	0.5	1.6	खत / पीट निर्मितीसाठी वापरले जाईल.

क. वासाचा उपद्रव

सदर प्रकल्पांतर्गत मोलॅसिस हाताळणी व साठवणुक, फर्मन्टेशन व डिस्टीलेशन, सांडपाणी प्रकिया यंत्रणा, खराब मील स्टॅनिटेशन आणि ढुर्लक्षित ड्रेन्स इ. वासाच्या उपद्रवाचे स्त्रोत असतील. सध्या वासाच्या नियंत्रणासाठी नीटनेटके हाऊस किपींग, ई.टी.पी. युनिट मधील मैला व्यवस्थापन, ड्रेन्ससाठी क्लिचींग पावडरचा वापर इ. बाबी व्यवस्थित हाताळल्या जातात व आसवनी प्रकल्पांतर्गत देखिल केल्या जातील. आसवनी प्रकल्पांतर्गत स्पेंटवॉश बंद नलिकेतुन हाताळणी, साठवणुकीसाठी व विल्हेवाटीसाठी नेले जाईल यामुळे होणारा वासाचा उपद्रव कमी होईल.

ड. नियम व अटींचे पालन

सध्याच्या प्रकल्पाअंतर्गत महाराष्ट्र प्रदुषण नियंत्रण मंडळ (MPCB) किंवा तत्सम संस्थेमार्फत सांडपाणी प्रकिया व विल्हेवाट, घातक स्वरूपाचा कचरा व घन कचरा हाताळणी व विल्हेवाट तसेच वायु ऊत्सर्ज ने इ. संबंधित घालुन देण्यात आलेल्या सर्व कायदयांचे व नियमांचे काटेकोरपणे पालन केले जाते. सदर कार्यपद्धती प्रस्तावित प्रकल्पांतर्गतही पाळली जाईल.

ई. पर्यावरण व्यवस्थापन विभाग

म.शिं.सा.आ.ऊ.लि. मध्ये पर्यावरण व्यवस्थापन विभाग कार्यरत आहे. या विभागातील सर्व सदस्य उच्चशिक्षित आणि संबंधीत क्षेत्रातील योग्य तो अनुभव असलेले आहेत. सध्याच्या व प्रस्तावित पर्यावरण व्यवस्थापन विभागामधील सदस्य खालीलप्रमाणे

तक्ता 13 पर्यावरण व्यवस्थापन विभाग

क्र.	नावे	पदाचे नाव
1	श्री.अरविंद चौधरी	चिफ केमिस्ट
2	श्री.जी.आर.एखांडे	ई.टी.पी. ऑपरेटर
3	श्री. ए.डी.कदम	केमिस्ट

सध्याच्या व प्रस्तावित प्रकल्पांमधील पर्यावरण घटकांसाठी व त्यांच्या देखभालीसाठी लागणा-या खर्चा चा तपशील खालीलप्रमाणे:-

तक्ता 14 देखभालीसाठीच्या खर्चाचा तपशील (सध्याच्या व प्रस्तावित)

क्र.	तपशील	खर्च (रू. लाख मध्ये)	
		भांडवली गुंतवणूक	वार्षिक देखभाल व दुरूस्ती
अ.	**सध्याच्या प्रकल्पासाठी**		
1.	हवा प्रदुषण नियंत्रणासाठी लागणारा खर्च वेट स्क्रबर, 65 मी. उंचीची चिमणी व ऑनलाईन मॉनिटरिंग सिस्टीम	620	60
2.	जल प्रदुषण नियंत्रण (ई.टी.पी.), ऑनलाईन सिस्टीम	100	10
3.	ध्वनी प्रदुषण नियंत्रण	35	5
4.	एन्व्हायरमेंटल मॉनिटरींग व मॅनेजमेंट	50	5
5.	आरोग्य व सुरक्षीतता	50	5
6.	हरित पट्टा विकास	80	8
	एकुण (रू. 225.51 कोटी भांडवली गुंतवणुकीच्या 4%)	रू. 935	रू. 93
ब.	**प्रस्तावित प्रकल्पासाठी**		
1.	हवा प्रदुषण नियंत्रणासाठी 60 टि.पी.एच बॉयलर (ई.एस.पी.), 65 मी.व 35 मी. उंचीची चिमणी, ऑनलाईन मॉनिटरिंग सिस्टीम	1260	120
2.	जल प्रदुषण नियंत्रण -सि. पी. यु. एस.टी.पी., एम. ई. ई. ऑनलाईन मॉनिटरिंग इक्विपमेंट	2075	200
3.	ध्वनी प्रदुषण नियंत्रण	50	5
4.	एन्व्हायरमेंटल मॉनिटरींग व मॅनेजमेंट	50	5
5.	आरोग्य व सुरक्षीतता	100	10
6.	हरित पट्टा विकास	100	10
	एकुण (रू. 498 कोटी भांडवली गुंतवणुकीच्या 7 %)	रू. 3635	रू. 350
	एकुण (अ + ब)	**रू. 4570**	**रू. 443**

य) रेनवॉटर हार्वेस्टिंग संकल्पना

- सरासरी वार्षिक पाऊस 833 मिमी.

तक्ता 15 रेनवॉटर हार्वेस्टिंगसाठी घेतलेले क्षेत्र

क्र.	तपशील	क्षेत्र (चर्म.मी)	सरासरी वार्षिक पाऊस (मी)	रन ऑफ फॅक्टर	हार्वेस्टिंग मधून मिळणारे पाणी (घन मी)
1	**रुफटॉप हार्वेस्टिंग**				
	रुफटॉप हार्वेस्टिंग	83,898	0.83	0.8	55,910
				रुफटॉप हार्वेस्टिंग	55,910
2	**सरफेस हार्वेस्टिंग**				
	हरित पट्टा	1,23,302	0.83	0.3	30,813
	रस्त्याखालील क्षेत्र	15,351	0.83	0.5	6,394
	खुलेक्षेत्र	36,368	0.83	0.3	9,088
	वाहनतळ क्षेत्र	75,654		0.5	31,510
				सरफेस हार्वेस्टिंग	77,805
				एकुण	1,33,715 घन मी.
					133.7 दशलक्षलि.

र) हरित पट्टा माहिती

तक्ता 16 क्षेत्रफळाची माहिती

अ.क्र.	तपशील	क्षेत्र (चर्ग.मी)
1	एकुण क्षेत्र	3,70,528
2	बांधकामाखालील एकूण क्षेत्र	1,19,854
3	एकुण खुले क्षेत्र	36,367
4	सध्याचे हरित क्षेत्र (एकुण क्षेत्राच्या 10 ‰)	38,302
5	प्रस्तावित हरित पट्टा (एकुण क्षेत्राच्या 23 ‰)	85,000
6	**एकुण हरित पट्टा (एकुण क्षेत्राच्या 33)**	1,23,302

हरित पट्टा विकसित करण्यासाठी SPM, SO_2 चे उत्सर्जन या बाबी प्रामुख्याने विचारात घेतल्या जातील. SPM, SO_2 यांच्या उत्सर्जनांमुळे होणारे परिणाम कमी करण्यास उपयुक्त अशा हरित पट्टा विकास कार्यक्रम राबविला जाईल. तसेच नियोजित हरित पट्टयातील झाडांमुळे इंडस्ट्रीमध्ये तयार होणा-या ध्वनीची तीव्रता कमी होऊन परिसरात होणारे ध्वनी प्रदुषण कमी होणेस मदत होईल. यानुसार SO_2 आणि ध्वनी प्रदुषण नियंत्रण इ. बाबी लक्षात घेऊन प्रस्तावित हरित पट्टा विकास कार्यक्रमाअंतर्गत विविध जातीच्या झाडांची लागवड केली जाईल.

ल) सामाजिक व आर्थिक विकास

सामाजिक व आर्थिक विकास अंतर्गत प्रकल्पास केंद्रस्थानीमानुन 10 कि. मी. परीघ क्षेत्रामधील गावांचे सर्वेक्षण केले गेले. या अंतर्गत वैयक्तिकरित्या लोकांच्या मुलाखती मराठी प्रश्नावलीद्वारे (32 प्रश्न) घेण्यात आल्या. अधिक माहीतीसाठी EIA रिपोर्ट मधील प्रकरण – 3 सामाजिक व आर्थिक विकास मुद्दा पहा. सामाजिक व आर्थिक विकास अभ्यासामधील निरीक्षण आणि निष्कर्ष पुढील प्रमाणे

7) <u>पर्यावरणविषयक तपासणी कार्यक्रम</u>

अभ्यासासाठी निवडलेल्या भागाची पूर्व पाहणी करण्यात आली होती. प्रस्तावित प्रिकल्पाच्या सभोवतालच्या हवामान परिस्थीतीच्या माहितीसाठी हवा, पाणी व माती स्वरूप इ. गोष्टींचा अभ्यास जानेवारी 2021 मध्ये सुरू केला गेला होता. या प्रस्तावामध्ये ऑक्टोबर 2021 ते डिसेंबर 2021 या दरम्यानच्या कालावधीमध्ये गोळा केलेली माहीती नमूद केली आहे. यासंबंधीची द्वितीय स्तरावरील माहिती ही सरकारी विभागांकडून घेण्यात आली आहे ज्यामध्ये भुर्गभीय पाणी, माती, शेती आणि वने इ. समावेश आहे.

अ. जमीनीचा वापर

जमीन वापराच्या अभ्यासामध्ये भागाची रचना, कारखाने, जंगल, रस्ते आणि रहदारी इ. गोष्टींचा विचार केला जातो. संबंधीत माहिती ही विविध द्वितीय स्तरांवरून जसे की जनगणना पुस्तिका, सरकारी कार्यालये, सर्वे ऑफ इंडिया टोपोशीटस्, याचबरोबर सॅटेलाईट इमेजीस् व जागेवरील प्राथमिक सर्वे इ. मधुन घेण्यात आली आहे.

ब. अभ्यासासाठी निवडलेल्या जमीनीचा वापर / व्यापलेली जमीन

तक्ता 17 जमीनीचा वापर / व्यापलेली जमीन

अ.क्र.	जमीनीचावापर / व्यापलेलीजमीन	क्षेत्र (हेक्टर)	टक्केवारी(‰)
1	बांधकामाखालील जमीन	420	1.34
2	लागवडीखालील जमीन	18057	57.48
3	पडिक जमीन	11968	38.10
4	नापीक जमीन	685	2.18
5	जल संस्था	60	0.19
6	नदी	225	0.72
	एकुण	31415	100.00

क. हवामान माहिती

सदर पाहणीसाठी ब्यूरो ऑफ इंडियन स्टॅन्डर्ड (BIS) आणि इंडियन मेट्रोलॉजी डिपार्टमेंट (IMD) यांनी नमूद केलेली मानके वापरली आहेत. हवामान परिस्थितीच्या माहितीसाठी वेगवेगळया हवामान घटकांचा अभ्यास प्रत्यक्ष जागेवरती केला गेला आहे. यासंबंधीची द्वितीय स्तरावरील अधिक माहिती ही हवामान विभाग, कोल्हापूर येथून घेण्यात आली आहे. त्यामध्ये तापमान, आर्द्रता, पर्जन्यमान इ. बाबींचा समावेश आहे.

वेगवेगळया हवामान घटकांचा अभ्यास हा ऑक्टोबर 2021 ते डिसेंबर 2021 यादरम्यान केला गेला होता. षा अभ्यासातील परिमाणे, उपकरणे व वारंवारता यांचा तपशील ई. आय. ए. रिपोर्टच्या प्रकरण 3 मध्ये देणेत आला आहे.

ड) हवेचा दर्जा

या विभागामधून नमुने घेतलेल्या ठिकाणांची निवड, नमुना घेण्याची पद्धत, पृथःकरणाची तंत्रे आणि नमुना घेण्याची वारंवारता इ. गोष्टींची माहिती दिली आहे. ऑक्टोबर 2021 ते डिसेंबर 2021 या कालावधी मधील निरीक्षणानंतरचे निकाल सादर केले आहेत. सर्व मॉनिटरींग असाइनमेंटस्, नमुने घेणे व त्यांचे पृथःकरण NABL व MoEFCC, New Delhi मान्यता प्राप्त तसेच ISO 9001 – 2015 व OHSAS 18001 – 2007 मानांकित मे. ग्रीन एन्वायरोसेफ इंजिनीअर्स अँड कन्सल्टंटस् प्रा. लि., पुणे या प्रयोग शाळेमार्फत केले आहे. अभ्यास क्षेत्रातील हवेच्या गुणवत्तेचे मूल्यमापन करण्यासाठी PM_{10}, $PM_{2.5}$, SO_2, NO_X व CO. या घटकांचे वेगवेगळया स्थानाकांवर मॉनिटरींग केले गेले. मॉनिटरींगची वेगवेगळी स्थानके खाली दिलेल्या तक्त्यामध्ये दाखवली आहेत.

तक्ता क्र. 18 हवा परिक्षणाची स्थानके

AAQM केंद्र आणि संकेतांक	स्थानकाचेनाव	साईट पासूनचे अंतर (कि.मी.)	साईटला अनुसरुन दिशा
A1	साईट	---	---
A2	हाटकरवाडी	3.70	E
A3	कापशेवाडी	4.41	E
A4	केवाड	3.90	W
A5	डंढरगाव	4.60	W
A6	जामगाव	3.57	N
A7	कढमवस्ती	1.92	SE
A8	तुर्क - पिंपरी	2.29	NE

तक्ता 19 Summary of the AAQ Levels for Monitoring Season
[ऑक्टोबर 2021 ते डिसेंबर 2021]

परिमाण		ठिकाण							
		साईट	हाटकरवाडी	कापशेवाडी	केवाड	डंढरगाव	जामगाव	कढमवस्ती	तुर्क - पिंपरी
PM_{10} $\mu g/M^3$	Max	66.9	57.9	56.9	59.9	58.8	57.9	57.0	59.0
	Min	63.2	53.2	54.1	57.1	56.0	55.1	54.2	56.1
	Avg	65.2	55.9	55.7	58.4	57.4	56.4	55.5	57.5
	98%	66.9	57.7	56.9	59.9	58.8	57.9	57.0	59.0
$PM_{2.5}$ $\mu g/M^3$	Max	28.0	18.9	18.8	20.5	20.9	19.3	18.9	20.0
	Min	25.1	15.4	16.0	18.1	18.3	16.1	16.1	17.1
	Avg	26.2	16.9	17.4	19.4	19.6	17.7	17.4	18.5
	98%	28.0	18.9	18.7	20.5	20.8	19.3	18.9	20.0
	Max	26.9	17.9	17.8	19.1	18.2	17.9	17.7	18.9
	Min	24.2	15.1	15.1	16.3	16.0	15.1	14.9	16.1

परिमाण		ठिकाण							
		साईट	हाटकरवाडी	कापशेवाडी	केवाड	डंढरगाव	जामगाव	कढमवस्ती	तुर्क - पिंपरी
SO_2 $\mu g/M^3$	Avg	25.6	16.4	16.4	18.0	17.1	16.4	16.3	17.5
	98%	26.9	17.9	17.8	19.1	18.2	17.9	17.7	18.9
NOx $\mu g/M^3$	Max	30.9	19.3	19.6	21.9	21.8	19.9	20.9	21.0
	Min	27.0	16.2	16.8	19.1	18.7	17.1	17.2	18.4
	Avg	29.1	17.8	18.2	20.4	20.5	18.4	18.5	19.7
	98%	30.7	19.3	19.6	21.9	21.8	19.9	20.4	21.0
CO mg/M^3	Max	0.90	0.10	0.10	0.10	0.10	0.10	0.10	0.10
	Min	0.10	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Avg	0.47	0.06	0.06	0.05	0.06	0.05	0.05	0.05
	98%	0.90	0.10	0.10	0.10	0.10	0.10	0.10	0.10

Notes: PM10, $PM_{2.5}$, SO_2 and NO_x are computed based on 24 hourly values., CO is computed based on 8 hourly values.

तक्ता 20 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} $\mu g/M^3$		$PM_{2.5}$ $\mu g/M^3$		SO_2 $\mu g/M^3$		NOx $\mu g/M^3$		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

इ) पाण्याची गुणवत्ता

पाण्याच्या भौतिक, रासायनिक गुणधर्मांची आणि त्यातील जड धातूंची तपासणी करण्यासाठी MoEFCC, New Delhi मानांकित मे. ग्रीन एनवायरोसेफ इंजिनीअर्स आणि कंसलटंटस् प्रा. लि., पुणे यांच्या मार्फत नमुने घेऊन त्यांचे पृथःकरण केले. भूर्गभातील पाण्याच्या नमुना चाचणीसाठी 9 ठिकाणे व भूपृष्ठीय पाण्याच्या नमुना चाचणीसाठी 6 ठिकाणे घेतली होती ती खालील प्रमाणे -

तक्ता 21 पृष्ठभागावरील पाण्यासाठी निवडलेली ठिकाणे

स्थानक संकेतांक	स्थानकाचे नाव	प्रकार	साईट पासुनचे अंतर	साईट पासुनची दिशा
SW1	तुर्क – पिंपरी	नाला	2.74	NNE
SW2	केवाड	नाला	0.61	NW
SW 3	माणंगाव	नाला	2.98	SSW
SW 4	डंढरगाव	नदी	4.31	W
SW5	पाकव	नदी	5.07	SSW
SW6	खेंराव	नदी	7.52	SSW

तक्ता 22 भूगर्भातील पाण्यासाठी निवडलेली ठिकाणे

स्थानक संकेतांक	स्थानकाचे नाव	को-ऑर्डिनेटस	साईट पासुनचे अंतर	साईट पासुनची दिशा
GW1	केवाड	18°1'20.74"N, 75°36'38.72"E	1.24	W
GW2	माणंगाव	18°1'12.87"N, 75°37'5.15"E	0.57	SW

स्थानक सांकेतांक	स्थानकाचे नाव	को-ऑर्डिनेटस	साईट पासूनचे अंतर	साईट पासूनची दिशा
GW3	तुर्क – पिंपरी	18°1'15.26''N,75°37'13.15''E	0.34	W
GW4	पिंपरी	18°1'15.91''N, 75°37'25.76''E	0.28	E
GW5	तुर्क – पिंपरी	18°1'39.22''N, 75°37'22.91''E	0.49	N
GW6	तुर्क – पिंपरी	18° 1'43.16''N, 75°37'9.24''E	0.69	NNW
GW7	तुर्क – पिंपरी	18° 1'36.43''N, 75°37'6.14''E	0.59	NW
GW8	तुर्क – पिंपरी	18° 1'34.90''N, 75°37'8.83''E	0.50	NW
GW9	तुर्क – पिंपरी	18° 1'19.89''N, 75°37'11.68''E	0.30	W

या बद्दलची सविस्तर माहिती ई.आय.ए. रिपोर्ट मधील प्रकरण 3 मध्ये आहे.

फ) ध्वनीपातळीचे सर्वेक्षण

ध्वनीपातळीचे सर्वेक्षणसाठी कारखाना परिसरा सकेंद्र मानून त्यापासून 10 कि.मी. अंतराच्या परिघामध्ये येणारा भाग हा अभ्यासक्षेत्र म्हणून विचारात घेण्यात आला होता. ध्वनी पातळीचे मॉनिटरींगसाठी रहिवासी, व्यावसायिक, औद्योगिक, शांतता विभाग असेचा सविभाग विचारात घेण्यात आलेहोते. याअभ्यासामध्ये काही महत्वाच्या रस्त्यांवर वाहतुकीमुळे होणारा आवाजसुद्धा समाविष्ट केला होता. प्रत्येकठिकाणी 24 तासासाठी ध्वनी पातळीचे मॉनिटरींग करण्यात आले. ध्वनी पातळीचे मॉनिटरींगची वेगवेगळी स्थानकेखाली दिलेल्या तक्त्यामध्ये दाखवली आहेत.

तक्ता 23 ध्वनी नमुना ठिकाणे

स्थानक सांकेतांक	स्थानकाचे नाव	साईट पासूनचे अंतर	साईट पासूनची दिशा
N1	साईट	-	-
N2	तुर्क – पिंपरी	2.3	NEN
N3	मालवंडी	4.8	NE
N4	कापसेवाडी	4.4	E
N5	मानेगाव	4.8	SE
N6	वाकव	4.9	SW
N7	केवाड	3.8	WNW
N8	जामगाव	4.0	NWN

तक्ता 24 ध्वनी पातळी

ठिकाण	समासरी ध्वनी पातळी (डेसिबल)					
	L_{10}	L_{50}	L_{90}	$L_{eq(day)}$	$L_{eq(night)}$	L_{dn}
N1	53.0	57.1	58.3	64.4	51.4	63.5
N2	43.6	46.7	48.2	51.6	42.7	52.0
N3	41.7	45.0	47.6	51.2	40.0	50.8
N4	41.4	46.3	47.6	52.5	41.6	52.2
N5	41.5	42.9	45.6	46.9	39.7	48.2
N6	42.8	46.5	47.6	52.0	42.1	52.1
N7	41.1	44.6	46.7	51.4	39.2	50.7
N8	41.2	43.9	46.7	49.8	39.4	49.7

ग) सामाजिक ं आर्थिक रचना

सामाजिक व आर्थिक स्तरावरून त्याभागातील प्रगती दर्शनास येते. कोणत्याही प्रकारच्या विकास प्रकल्पामुळे कार्यक्षेत्रात राहणा-या लोकांच्या राहणीमानावर, सामाजिक व आर्थिक स्तरावर प्रभाव पडतो. याबद्दलची सविस्तर माहिती ई.आय.ए. रिपोर्ट मधील प्रकरण 3 मध्ये आहे.

ष) पर्यावरण

विस्तारिकरणासाठी प्रकल्पाच्या प्रश्नावलीचा वापर करून पर्यावरण व जैवविविधता अभ्यासासाठी सर्वेक्षण केले गेले. प्रकल्पाच्या 10 कि.मी. परिघातील 28 गावे पर्यावरण व जैवविविधता अभ्यासासाठी अनुकुल आढळली जी अभ्यासक्षेत्रातील बहुतांश वसतीस्थानांचे प्रतिनिधित्व करतात. उद्योग स्थानापासुन 10 किमी.

8) <u>इतर अभ्यास</u>

आपत्ती व्यवस्थापन

आपत्ती व्यवस्थापन करताना, खालील बाबींचा विचार केला जातो.

1. प्रकल्पाच्या शेजारी राहणा-या लोकानां प्रकल्पामुळे कमीत कमी धोका असावा.
2. प्रकल्पामध्ये काम करणा-या कामगारांना शेजारी राहणा-या लोकांपेक्षा जास्त धोका अपेक्षित आहे, यामुळे प्रकल्पामध्ये काम करणा-या कामगाराना संभाव्य धोक्यापासून रक्षणाचे ट्रेनिंग दिले गेले पाहिजे जेणे करून संभाव्य धोके कमी होतील.

ग्रीन ए. जी. (1982) यांनी आपत्ती व्यवस्थापन करताना विचारात घेतलेल्या बाबी -

1. प्रकल्पास धोका : जेव्हा जिवीतास कमीत कमी धोका असतो व तो धोका पुढे कमी करणे शकय होत नाही यावेळी हयाधोक्यास प्राथमिकता दिली गेली पाहिजे. याअंर्तगत संभावित वित्तीय नुकसानीच्या धोक्याचा विचार केला जातो.
2. कामगार व जनतेस धोका : फेटल ॲक्सिडेंट रेट (एफ. ए. आर) किंवा फेटल ॲक्सिडेंट फिक्वेंन्सी रेट (एफ. ए. एफ. आर) याचा वापर कामगार व जनतेस धोके यांचा अभ्यास करताना वापर केला जातो. एफ. ए. आर व एफ. ए. एफ. आर म्हणजेच औद्योगिक अपघातांमध्ये 1000 लोकांमागे होणा-या अपेक्षित मृतांची संख्या होय.

यासंबंधीची अधिक माहिती इ. आय. ए. रिपोर्ट मधील प्रकरण 7 येथे जोडली आहे.

9) पर्यावरणावर होणारे परिणाम आणि त्यासाठीच्या उपाय योजना

अ. भौगोलिकरचनेवर परिणाम

सदर प्रकल्पांतर्गत सध्याच्या प्रकल्पामध्ये विस्तारीकरण होणार असलेने संपादित जागेच्या भौगोलिक रचनेवर परिणाम अपेक्षित नाही. सदर औद्येगिक प्रकल्पामुळे काही सकारात्मक फायदे जसे की जमिन विकसिकरण, व झाडे लावणे अपेक्षित आहे.

ब. वातावरणावरील परिणाम

प्रस्तावित विस्तारीकरण प्रकल्पामुळे हवामानावर परिणाम अपेक्षित नाही कारण जास्त तापमान असणा या वायुंचे उत्सर्जन अपेक्षित नाही.

हवेच्यादर्जावरील परिणाम

प्रस्तावित विस्तारीकरण प्रकल्पामुळे होर्णा या परिणामांची छाननी करण्यासाठी कारखाना परिसरास केंद्र मानून त्यापासून 10 कि.मी. अंतरच्या परिघामध्ये येणारा भाग विचारात घेतला गेला आहे.

1. मुलभूत ॲम्बिएंटवायूप्रमाणके

ऑक्टोबर 2021 ते डिसेंबर 2021 मध्ये करण्यात आलेल्या क्षेत्र अभ्यासा दरम्यान नोंद करण्यात आलेली 24 तासामधील 98 पर्सेंटाईल प्रमाणके आणि PM_{10}, $PM_{2.5}$, SO_2 व NO_X यांची सभोवतालच्या हवेमधील सरासरी यानुसार मिळालेल्या प्रमाणांना मुलभूत प्रमाणके मानण्यात आली आहेत. सदर प्रमाणके परिसरामध्ये होणारा परिणाम दर्शवितात.सध्याची मुलभूत प्रमाणके ई.आय. ए. रिपोर्ट मधील प्रकरण 4 तसेच पुढील तक्त्यामध्ये मांडण्यात आली आहेत.

Table .25 Baseline Concentrations (98 Percentile)

तपशील	PM_{10}	$PM_{2.5}$	SO_2	NO_X	CO
Conc. ($\mu g/m^3$)	66.9	28.0	26.9	29.1	0.90
NAAQS	100 $\mu g/m^3$	60 $\mu g/m^3$	80 $\mu g/m^3$	80 $\mu g/m^3$	4mg/m^3

२. हवा प्रदुषण स्त्रोत

परस्तारीकरणातंर्गत आसवनी प्रकल्पामध्ये 35 टन प्रति तास क्षमतेचा बॉयलर उभारणेत येणार आहे. सध्याच्या साखर कारखान्यातंर्गत 140 टन प्रति तास, क्षमतेचे बॉयलर कार्यरत आहेत.ज्यासाठी बगॅस इंधन म्हणून वापरले जाते. या बॉयलरना ई.एस.पी. हे प्रदूषण नियंत्रक उपकरण असवले आहे. प्रदूषण नियंत्रण करण्यासाठी बॉयलरना 65 मी.उंचीची चिमणी असवली आहे. प्रस्तापित साखर कारखान्याअंतर्गत 60 टन प्रति तास, क्षमतेचे बॉयलर कार्यरत आहेत.ज्यासाठी बगॅस इंधन म्हणून वापरले जाते. या बॉयलरना ई.एस.पी. हे प्रदूषण नियंत्रक उपकरण असवले आहे.
सध्याच्या साखर कारखान्याअंतर्गत 500 के.व्ही.ए. क्षमतेचा नवीन 3 डी.जी.सेट असविला आहे.प्रस्तापित प्रकल्पामध्ये 500 के.व्ही.ए. क्षमतेचा नवीन 2 डी.जी.सेट असविला जाईल.

ड. जलस्त्रोतावरील परिणाम

१. भुपृष्ठीय जलस्त्रोतावरील परिणाम

म.शिं.सा.आ.क.लि यांच्या सध्याच्या व प्रस्तावित प्रकल्पामध्ये लागणारे पाणी भूजल मधुन घेतले जाईल. सॉ स्पेंटवॉश MEE मध्ये प्रकिया केले जाईल. स्पेंटलीज़ MEE कंडेनसेट व इतर सांडपाणी CPU मध्ये प्रकियित करून त्याचा पुर्नवापर केला जाईल.साखर कारखान्यातून निघणारे सांडपाणी हे औढयोगिक सांडपाणी प्रकिया केंद्रात प्रकियीत करून त्याचा पुर्नवापर केला जाईल.
म.शिं.सा.आ.क.लि प्रकल्पामधील साखर कारखाना, सहवीज आणि आसवनी मधुन निघणारे घरगुती सांडपाणी प्रस्तावित सांडपाणी प्रकिया केंद्रामध्ये(STP) मध्ये प्रकिया केले जाईल.

२. भूगर्भिय पाण्याच्या गुणवत्तेवर होणारा परिणाम

प्रकल्पांसाठी लागणारे जरूरी पाणी हे भूजल मधुन घेतले जाईल.कारखान्यामधुन कोणत्याही प्रकारचे अप्रकियीत सांडपाणी विसर्जीत होणार नाही त्यामुळे भूजल पाणी पातळीवर व गुणवत्तेवर कोणताही परिणाम होणार नाही.

इ. माती वर होणारे परिणाम

मातीच्या गुणधर्मावर होणारे परिणाम हे साधारणपणे वायू उत्सर्जन, सांडपाण्याचे आणि घनकचरा विनियोग यांमुळे होत असतात. वर उल्लेख केल्याप्रमाणे कोणत्याही प्रकारे अप्रकियित सांडपाणी जमिनीवर सोडण्यात येणार नाही. वायु उत्सर्जन रोखण्यासाठी ई.एस.पी.हे वायु प्रदुषणनियंत्रक उपकरण पुरविले आहे. यामुळे कोणत्याही प्रकारे प्रकिया उत्सर्जन होणार नाही म्हणून मातीतील घटकांवर होणारा परिणाम शुन्य असेल.बॉयलरची राख, सी. पी. यु. स्लज हे कंपोस्टिंगसाठी वापरले जाईल. त्यामूळे वायु प्रदूषके अथवा सांडपाण्यामुळे जमिनीच्या रासयनिक घटकांमध्ये कोणताही मोठा बदल होणार नाही.

फ. ध्वनी मर्यादेवर होणारा परिणाम

अतिध्वनी निर्माण करणा या यंत्रावर काम करीत असणा-या कामगारांचे संतुलन बिघडुन कामावर परिणाम होण्याची शक्यता असते. ध्वनी निर्माण करणाऱ्या स्त्रोताजवळ असणाऱ्या लोकांची ऐकण्याची क्षमता कमी होऊ शकते. सदर प्रकल्पामध्ये मुख्यत: साखर कारखान्यातील मील, कॉम्प्रेसर, बॉयलर, टर्बाइन व डि. जी. सेट हे ध्वनी प्रदूषणाचे मुख्य स्त्रोत ठरतील. सदर प्रकल्प हा ध्वनीप्रदुषण करणारा नसणार आहे.

ग. जमीन वापरावर होणारा परिणाम

म.शिं.सा.आ.क.लि यांच्या सध्याच्या जागेमध्ये साखर कारखानाउभारण्यात आला आहे. प्रस्तावित आसवनी प्रकल्प हा सध्याच्या छ.सं.रा.सा.क.लि.कारखान्याच्या आवारात उभारण्यात येईल. यामुळे जमीन वापरामध्ये बदल अपेक्षित नाही.

ष. झाडांवर व प्राण्यांवर होणारा परिणाम

प्रकिया न केलेले सांडपाणी कारखान्याच्या सभोवताली विसर्जित केल्यास पाणी संस्था व त्यावर अवलंबून असलेली जैवविविधतेवर परिणाम संभोवतो. वायु प्रदुषणा संदर्भात कारखाना SPM च्या स्वरूपात प्रदुषण योगदान देऊ शकतो. याचा विपरीत परिणाम अंशतः पक्षी, सभोवतालची पीके आणि स्थानिक लोकांवर होऊ शकतो. झाडांवर व प्राण्यांवर होणारा परिणामांची माहिती ई. आय. ए. रिपोर्ट मधील प्रकरण 3 मध्ये देण्यात आलेली आहे.

द. ऐतिहासिक ठिकाणावर होणारा परिणाम

प्रकल्पाच्या 10 कि.मी क्षेत्रात कोणतेही ऐतिहासिक ठिकाण येत नसलेने ऐतिहासिक ठिकाणावर कोणताही परिणाम अपेक्षित नाही.

10) पर्यावरणीय निरीक्षण आराखडयाची ठळक वैशिष्टये

तक्ता 27 मध्ये दिलेला विस्तृत पर्यावरणीय निरीक्षण आराखडयाची अंमलबजावणी केली जाईल. पर्यावरणीय निरीक्षणाव्यतिरिक्त पर्यावरणीय मंजुरीमध्ये दिलेल्या अटींची पुर्तता तसेच CPCB/ MoEFCC/ MPCB यांच्याकडील नियमित परवानग्या आणि रिपोर्टस पुढील संदर्भासाठी सुस्थितीत ठेवली जातील.

तक्ता 26 पर्यावरणीय निरीक्षण आराखडयाची ठळक वैशिष्टये (ऑनसाईट)

क्र.	तपशील	ठिकाण	परिमाणे	वारंवारता	तपासणी
1	हवेची गुणवत्ता	आपिंड - 1, डाऊनविंड - 2 (केन यार्ड, मेन गेट जवळ,(ई.टी.पी. जवळ), वसाहती जवळ)	PM_{10}, $PM_{2.5}$, SO_2, NOx, CO	मासिक	MoEFCC & NABL Approved External Lab
		अभ्यास क्षेत्र गावे (Villages namely – हाटकरवाडी, कापशेवाडी, केवाड ,उंदरगाव , जामगाव , ,तुर्क - पिंपरी		त्रैमासिक	
2	कामाच्या ठिकाणाची हवेची गुणवत्ता	4 ठिकाणी (मील विभाग, साखरपोती भरणा विभाग, आसवनी विभाग)	PM_{10}, $PM_{2.5}$, SO_2, NOx, CO	मासिक	
3	चिमणीतुन होणारे उत्सर्ज न	बॉयलरच्या 3 चिमण्या, डी.जी. सेटची चिमणी (5)	SPM, SO_2, NOx	मासिक	
4	ध्वनि गुणवत्ता	मेनगेट जवळ, ई. टी. पी. जवळ, साखर गोदाम , टर्बाइन विभाग, बॉयलर	Spot Noise Level recording; Leq(n), Leq(d), Leq(dn)	मासिक	
	कामाच्या ठिकाणाची ध्वनि	मील विभाग, बॉयलर, डी. जी. सेट, टर्बाइन विभाग		मासिक	
5	सांडपाणी	• प्रक्रिया न केलेले • प्रक्रिया केलेले	pH, SS, TDS, COD, BOD, Chlorides, Sulphates, Oil & Grease.	मासिक	
6	पिण्याचे पाणी	कारखान्याची वसाहत	Parameters as per drinking water Std IS:10500	मासिक	
7	जमीन	5 किमी मधील 8 ठिकाणे	pH, Salinity, Organic Carbon, N, P, K	त्रैमासिक	
8	पाण्याची गुणवत्ता	अभ्यास क्षेत्रामधील 8 ठिकाणे	Parameters as per CPCB guideline for water quality monitoring – MINARS/27/2007-08	त्रैमासिक	

क्र.	तपशील	ठिकाण	परिमाणे	वारंवारता	तपासणी
9	कचरा व्यवस्थापन	प्रस्थापित कृतीतून तयार होणा या कर्च याचे वैशिष्टे आणि रूपानुशार व्यवस्थापन केले जाईल	कर्च याचे निर्मिती, प्रकिया आणि विल्हेवाट यांची नोंद	वर्षातून दोनदा	अ.शिं.सा.आ.ऊ.लि
10	आपातकालीन तयारी जसे की आग व्यवस्थापन	प्रतिबंधात्मक उपाय म्हणून आगीच्या व स्फोट होणाऱ्या ठिकाणी आगीपासून संरक्षण आणि सुरक्षिततेची काळजी घेतली जाईल.	ऑन साईट ईमरजन्सी व संकटकालीन साहेर पडण्याचा आराखडा	वर्षातून दोनदा	
11	आरोग्य	कारखान्याचे कामगार आणि स्थलांतरीत कामगारांसाठी आरोग्य शिबीराचे आयोजन	सर्व आरोग्य विषयक चाचण्या	वार्षिक	
12	हरीत पट्टा	कारखान्याच्या परीसरामध्ये आणि शेजारील गावांमध्ये	झाडे जगण्याचा दर	जिल्हा वन अधिकारी यांच्या सल्ल्यानुसार	
13	सी.ई.आर.	निर्देशाप्रमाणे		सहा महिन्यातुन	

QCI/NABET/ENV/ACO/22/2412 Jul. 05, 2022

To
Equinox Environments (India) Pvt. Ltd.
F-11, Namdev Nest, 1160-B, 'E' Ward,
Sykes Extension, Opp. Kamala College,
Kolhapur - 416001

Sub.: Extension of Validity of Accreditation till October 04, 2022– regarding
Ref.: Certificate no. NABET/EIA/1821/RA 0135

Dear Sir/Madam,

This has reference to the accreditation of your organization under QCI-NABET EIA Scheme, the validity of **Equinox Environments (India) Pvt. Ltd.** is hereby extended till October 04, 2022 or completion of assessment process, whichever is earlier.

The above extension is subject to the submitted documents/required information with respect to your application and timely submission and closure of NC/Obs. during the process of assessment.

You are requested not to use this letter after expiry of the above stated date.

With best regards.

(A K Jha)
Sr. Director, NABET

QCI/NABET/ENV/ACO/22/2307 Apr. 08, 2022

To
Equinox Environments (India) Pvt. Ltd.
F-11, Namdev Nest, 1160-B, 'E' Ward,
Sykes Extension, Opp. Kamala College,
Kolhapur - 416001

Sub.: Extension of Validity of Accreditation till July 08, 2022– regarding
Ref.: Certificate no. NABET/EIA/1821/RA 0135

Dear Sir/Madam,

This has reference to the accreditation of your organization under QCI-NABET EIA Scheme, the validity of **Equinox Environments (India) Pvt. Ltd.** is hereby extended till July 08, 2022 or completion of assessment process, whichever is earlier.

The above extension is subject to the submitted documents/required information with respect to your application and timely submission and closure of NC/Obs. during the process of assessment.

You are requested not to use this letter after expiry of the above stated date.

With best regards.

(Dr. Pawan Kumar Singh)
Deputy Director, NABET

QCI/NABET/ENV/ACO/22/2208 January 11, 2022

To
Equinox Environments (India) Pvt. Ltd.
F-11, Namdev Nest, 1160-B, 'E' Ward,
Sykes Extension, Opp. Kamala College,
Kolhapur - 416001

Sub.: Extension of Validity of Accreditation till April 10, 2022– regarding
Ref.: Certificate no. NABET/EIA/1821/RA 0135

Dear Sir/Madam,

This has reference to the accreditation of your organization under QCI-NABET EIA Scheme, the validity of **Equinox Environments (India) Pvt. Ltd.** is hereby extended till April 10, 2022 or completion of assessment process, whichever is earlier.

The above extension is subject to the submitted documents/required information with respect to your application and timely submission and closure of NC/Obs. during the process of assessment.

You are requested not to use this letter after expiry of the above stated date.

With best regards.

(A K Jha)
Sr. Director, NABET

QCI/NABET/ENV/ACO/21/2111 October 16, 2021

To
Equinox Environments (India) Pvt. Ltd.
F-11, Namdev Nest, 1160-B, 'E' Ward,
Sykes Extension, Opp. Kamala College,
Kolhapur - 416001

Sub.: Extension of Validity of Accreditation till January 15, 2022– regarding
Ref.: Certificate no. NABET/EIA/1821/RA 0135

Dear Sir/Madam,

This has reference to the accreditation of your organization under QCI-NABET EIA Scheme, the validity of **Equinox Environments (India) Pvt. Ltd.** is hereby extended till January 15, 2022 or completion of assessment process, whichever is earlier.

The above extension is subject to the submitted documents/required information with respect to your application and timely submission and closure of NC/Obs. during the process of assessment.

You are requested not to use this letter after expiry of the above stated date.

With best regards.

(A K Jha)
Sr. Director, NABET

Quality Council of India

National Accreditation Board for Education & Training

CERTIFICATE OF ACCREDITATION

Equinox Environments (India) Pvt. Ltd.

F-11, Namdev Nest, 1160-B, 'E' Ward, Sykes Extension,
Opp. Kamala College, Kolhapur – 416001, Maharashtra

Accredited as **Category - A** organization under the QCI-NABET Scheme for Accreditation of EIA Consultant Organizations: Version 3 for preparing EIA-EMP reports in the following Sectors:

Sl. No.	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1	Mining of minerals including opencast / underground mining	1	1 (a) (i)	A
2	Offshore and onshore oil and gas exploration, development & production	2	1 (b)	A
3	Thermal power plants	4	1 (d)	B
4	Metallurgical industries (ferrous & non-ferrous) - secondary only	8	3 (a)	B
5	Asbestos milling and asbestos based products	12	4 (c)	A
6	Pesticides industry and pesticide specific intermediates (excluding formulations)	17	5 (b)	A
7	Petro-chemical complexes (industries based on processing of petroleum fractions & natural gas and/or reforming to aromatics)	18	5 (c)	A
8	Petrochemical based processing (processes other than cracking &reformation and not covered under the complexes)	20	5 (e)	A
9	Synthetic organic chemicals industry (dyes & dye intermediates; bulk drugs and intermediates **excluding** drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemicals and chemical intermediates)	21	5 (f)	A
10	Distilleries	22	5 (g)	A
11	Sugar Industry	25	5 (j)	B
12	Common hazardous waste treatment, storage and disposal facilities (TSDFs)	32	7 (d)	A
13	Bio-medical waste treatment facilities	32 A	7 (da)	B
14	Common municipal solid waste management facility (CMSWMF)	37	7 (i)	B
15	Townships and Area development projects	39	8 (b)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in RA AC minutes dated May 31, 2019 posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no. QCI/NABET/ENV/ACO/19/1021 dated August 02, 2019. The accreditation needs to be renewed before the expiry date by Equinox Environments (India) Pvt. Ltd., Kolhapur, following due process of assessment.

Sr. Director, NABET
Dated: August 02, 2019

Certificate No.
NABET/ EIA/1821/ RA 0135

Valid till
21.10.2021

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.

List '1' – Accredited EIA Consultant Organizations (ACOs) - as on March 07, 2019#

S. No.	Consultant Organization	Scope of Accreditation			
		As per NABET Scheme			Project or Activity as per Schedule of MoEFCC Notification dated September 14, 2006 and subsequent Amendments
		Sector Number	Name of Sector	Category	
1	**Aadhi Boomi Mining and Enviro Tech Private Limited** (formerly known as Suriya Mining Services) **Address:**3/216, K.S.V.Nagar, Narasothipatti, Salem-636004 **Email:**suriyakumarsemban@gmail.com **Tel.:**09842729655, 09443290855 *Conditions apply*	1	Mining of minerals – opencast only	A	1 (a) (i)
		3	River Valley Projects	A	1 (c)
		7	Mineral beneficiation	A	2 (b)
		9	Cement Plants	A	3 (b)
		34	Highways	B	7 (f)
		38	Building and construction projects	B	8(a)
2	**Aakhivi Consultants** **Address:**57 C, Block E5, Shatabdi Vihar, Sector 52, Noida, UP - 201 308	1	Mining of minerals - opencast only	A**	1 (a) (i)
		4	Thermal power plants	A**	1 (d)

S. No.	Consultant Organization	Scope of Accreditation			
		As per NABET Scheme			Project or Activity as per Schedule of MoEFCC Notification dated September 14, 2006 and subsequent Amendments
		Sector Number	Name of Sector	Category	
			and dredging		
		34	Highways	A	7 (f)
		37	Common Municipal Solid Waste Management Facility (CMSWMF)	B	7 (i)
		38	Building and construction projects	B	8 (a)
		39	Townships and Area development projects	A	8 (b)
64	**Equinox Environments (India) Private Limited** **Address:** F-11, Namdev Nest, 1160- B, "E" Ward, Skyes Extension, Opp. Kamala College, Kolhapur- 416001 **e.mail:**projects@equinoxenvi.com, eia@equinoxenvi.com, eeipltd@equinoxenvi.com, **Tel.:** 0231-2531231/ 2526337 09822045083, 09881121522 *Conditions apply*	1	Mining of minerals including opencast / underground mining	A	1 (a) (i)
		4	Thermal power plants	B	1 (d)
		8	Metallurgical industries(ferrous only) - both primary & secondary	B	3 (a)
		12	Asbestos milling and asbestos based products	A	4 (c)
		13	Chlor-alkali industry	A	4 (d)
		17	Pesticides industry and pesticide specific intermediates (excluding formulations)	A	5 (b)
		18	Petro-chemical complexes (industries based on processing of petroleum fractions & natural gas and/or reforming to	A	5 (c)

S. No.	Consultant Organization	Scope of Accreditation			
		As per NABET Scheme			Project or Activity as per Schedule of MoEFCC Notification dated September 14, 2006 and subsequent Amendments
		Sector Number	Name of Sector	Category	
			aromatics)		
		20	Petrochemical based processing (processes other than cracking &reformation and not covered under the complexes)	A	5 (e)
		21	Synthetic organic chemicals industry (dyes & dye intermediates; bulk drugs and intermediates **excluding** drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemicals and chemical intermediates)	A	5 (f)
		22	Distilleries	A	5 (g)
		25	Sugar Industry	B	5 (j)
		32	Common hazardous waste treatment, storage and disposal facilities (TSDFs)	A	7 (d)
		37	Common municipal solid waste management facility (CMSWMF)	B	7 (i)
		38	Building and construction projects	B	8 (a)
		39	Townships and Area development projects	B	8 (b)
		40 (ii)	Electroplating and Metal Coating	-	-

S. No.	Consultant Organization	Scope of Accreditation			
		As per NABET Scheme			Project or Activity as per Schedule of MoEFCC Notification dated September 14, 2006 and subsequent Amendments
		Sector Number	Name of Sector	Category	
		40 (v)	Food Processing	-	-
65	**ERM India Private Limited** **Address:** Building No. 10,Tower A, Fourth Floor, DLF Cyber City, Gurgaon - 122002 **e. mail:** subir.gupta@erm.com **Tel.:** 0124-4170300 09810068161 *Conditions apply*	1	Mining of minerals including Open cast/ Underground mining	A	1 (a) (i)
		2	Off shore and on-shore oil and gas exploration, development & production	A	1 (b)
		3	River valley Projects	A	1 (c)
		4	Thermal power plants	A	1 (d)
		8	Secondary Steel only	B	3 (a)
		9	Cement plants	A	3 (b)
		13	Chlor-alkali industry	A	4 (d)
		16	Chemical Fertilizers	A	5 (a)
		17	Pesticides industry and pesticide specific intermediates (excluding formulations)	A	5 (b)
		18	Petro-chemical complexes (industries based on processing of petroleum fractions & natural gas and/or reforming to aromatics)	A	5 (c)
		20	Petrochemical based processing (processes other than cracking &reformation and not covered under the complexes)	A	5 (e)

MANAGEMENT SYSTEM CERTIFICATE

Certificate no.:
183398-2015-AQ-IND-RvA

Initial certification date:
28 August 2012

Valid:
28 August 2021 – 27 August 2024

This is to certify that the management system of

Equinox Environments (I) Pvt. Ltd.

Flat No. 11, Namdev Nest Apartment, 1160-B, 'E' Ward, Sykes Extension, Opp. Kamala College, Kolhapur - 416 001, Maharashtra, India

and the sites as mentioned in the appendix accompanying this certificate

has been found to conform to the Quality Management System standard:

ISO 9001:2015

This certificate is valid for the following scope:

Consultation and project management for:
- **Environmental impact assessment**
- **Prevention/control of pollution from effluents, emissions, noise & solid wastes**
- **Revival and conservation of lake/river**

Place and date:
Chennai, 26 August 2021

For the issuing office:
DNV - Business Assurance
ROMA, No. 10, GST Road, Alandur,Chennai - 600 016, India

MGMT. SYS. RvA C 024

Sivadasan Madiyath
Management Representative

Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.

ACCREDITED UNIT: DNV Business Assurance B.V., Zwolseweg 1, 2994 LB, Barendrecht, Netherlands - TEL: +31(0)102922689. www.dnv.com/assurance

Certificate no.: 183398-2015-AQ-IND-RvA
Place and date: Chennai, 26 August 2021

Appendix to Certificate

Equinox Environments (I) Pvt. Ltd.

Locations included in the certification are as follows:

Site Name	Site Address	Site Scope
Equinox Environments (I) Pvt. Ltd.	Flat No. 11, Namdev Nest Apartment, 1160-B, 'E' Ward, Sykes Extension, Opp. Kamala College, Kolhapur - 416 001, Maharashtra, India	Consultation and project management for environmental impact assessment
Enviclean Associates	Flat No. 11, Namdev Nest Apartment, 1160-B, 'E' Ward, Sykes Extension, Opp. Kamala College, Kolhapur - 416 001, Maharashtra, India	Consultation and project management for prevention/control of pollution from effluents, emissions, noise & solid wastes
Clinviron Consultants' Combine	(Environmental and Civil Engineers, Consultants and Analysts), Flat No. 11, Namdev Nest Apartment, 1160-B, 'E' Ward, Sykes Extension, Opp. Kamala College, Kolhapur - 416 001, Maharashtra, India	Consultation and project management for revival and conservation of lake/river

NABL 400

National Accreditation Board for Testing and Calibration Laboratories (NABL)

Directory of Accredited Testing Laboratories

As on : 31-Oct-2020

List of Laboratories Accredited in Accordance with the Standard ISO IEC 17025:2017

SL. NO.	NAME & CONTACT DETAILS OF THE LABORATORY	CERTIFICATE NO.	DISCIPLINE	DATE OF ISSUE	DATE OF EXPIRY	VALIDITY EXTENDED UPTO
83.	The Marine Product Export Development Authority (MPEDA), Quality Control Laboratory, MPEDA House, Panampilly Avenue, Ernakulam, P.B.No. 4272, Kochi, Ernakulam-682036, Kerala, India Landline No. (s): 944-6031638, 0484-2315199 Fax No. (s): 484-2313361 E-mail: suma@mpeda.gov.in Contact Person: Mr. Mahesh G	TC-8117	Chemical	14.11.2019	30.10.2020	30.10.2021
84.	ThyssenKrupp Electrical Steel India Pvt. Ltd. Testing Laboratory, At Post Gonde, Village Wadivarhe, Nashik-422403, Maharashtra, India E-mail: kapil.kapoor@thyssenkrupp.com Contact Person: Kapil Kapoor Mobile: 7030915117	TC-8228	Chemical Mechanical Electrical	02.11.2018	01.11.2020	01.11.2021
85.	Emerald Testing India (P) Ltd., 401, Telugu Street, Coimbatore-641001, Tamil Nadu, India Ph. No. 0422-2344718, 2346279 Fax: 0422-2340376 E-mail: etiplhallmark@gmail.com Contact Person: R.V. Sugumar Mobile: 9952199909	TC-8044	Chemical	23.09.2020	01.11.2020	01.11.2021
86.	National Food Laboratory, Ahinsa Khand-II, Indirapuram, Ghaziabad-201014, Uttar Pradesh, India Ph. No. 0120-2987172-2650950, E-mail: frslindia1971@gmail.com Contact Person: Ashok Kumar Patel Mobile: 8860405548	TC-5351	Chemical	24.02.2020	23.02.2022	23.02.2023
87.	Green Envirosafe Engineersand Consultant Pvt. Ltd., Survey No.1405/06, Mayuri Residency, Shop.No16, 2nd Floor, Sanaswadi, Tal Shirur, Pune-412208, Maharashtra, India Mb:0-9767838931,gesec12@gmail.com ContactPerson:Mr.SanjayTanpure	TC-8061	Chemical	03.11.2018	02.11.2020	02.11.2021

National Accreditation Board for Testing and Calibration Laboratories

CERTIFICATE OF ACCREDITATION

GREEN ENVIROSAFE ENGINEERS AND CONSULTANT PVT. LTD

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

A-7/2/C/11, CAPITAL CITY, TALAWADE-CHAKAN ROAD, CHAKAN MIDC, PH-IV, VILLAGE-NIGHOJE, TAL-KHED, PUNE, MAHARASHTRA, INDIA

in the field of

TESTING

Certificate Number: TC-10367

Issue Date: 01/03/2022 **Valid Until:** 29/02/2024

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.
(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Name of Legal Identity : GREEN ENVIROSAFE ENGINEERS & CONSULTANT PRIVATE LIMITED

Signed for and on behalf of NABL

N. Venkateswaran
Chief Executive Officer

REGD.NO.D.L.-33004/99

सत्यमेव जयते

भारत का राजपत्र
The Gazette of India

EXTRAORDINARY

PART II—Section 3—Sub-section (ii)

PUBLISHED BY AUTHORITY

No.352] NEW DELHI, FRIDAY, FEBRUARY 10, 2017/MAGHA 21,1938

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE NOTIFICATION

New Delhi, the 10th February, 2017

S.O. 388(E).—In exercise of the powers conferred by clause (b) of sub-section (1) of section 12 and section 13 of the Environment (Protection) Act, 1986 (29 of 1986), read with rule 10 of the Environment (Protection) Rules, 1986, the Central Government hereby makes the following further amendments in the notification of the Government of India in the erstwhile Ministry of Environment and Forests, number S.O. 1174(E), dated the 18th July, 2007, namely :-

In the Table appended to the said notification,-

(i) for serial numbers 12,16,18,21,22,47,75,76,77,88,89,90,91 and 92 the entries relating thereto, the following serial numbers and entries shall be substituted, namely:-

(1)	(2)	(3)	(4)
144	M/s Green Envirosafe Engineers and Consultant Pvt. Ltd. Gat No. 1405/06, Mayuri Residency, Office No. 16, 2nd Floor, Sanswadi, Pune- Nagpur Highway, Tal-Shirur, Pune- 412208, Maharashtra.	(i) Dr. Satish Damodar Kulkarni (ii) Dr. Ayodhya Kshirsagar (iii) Mr. Vinod Prataprao Hande	09.02.2017 to 08.02.2022

[F. No. Q. 15018/7/2003-CPW]

Dr. MANORANJAN HOTA, Advisor

Note : The principal notification was published in the Gazette of India, Extraordinary vide number S.O. 1174 (E), dated the 18th July, 2007 and subsequently amended vide notification numbers S.O. 1539 (E), dated the 13th September,2007, S.O.1811(E), dated the 24th October, 2007, S.O.55(E), dated 9th January, 2008, S.O.428(E), dated the 4 th March, 2008, S.O.No.865(E) dated the 11th April, 2008, S.O.No.1894(E) dated the 31st July, 2008, S.O.No.2728(E) dated the 25 th November, 2008, S.O.1356(E) dated the 27 th May, 2009, S.O.No.1802(E) dated the 22nd July, 2009 and S.O.No.2399(E), dated the 18th September, 2009 and S.O.No.3122(E), dated the 7th December, 2009 and S.O.No.3123(E), dated the 7th December, 2009, S.O.No.142(E), dated the 21st January, 2010, S.O.619(E), 19th March, 2010, S.O.No.1662(E) dated the 13rd July, 2010, S.O.No.2390(E), dated the 30th September, 2010 S.O.No.2904(E), dated the 8th December, 2010 and S.O.No.181(E), dated the 28th January, 2011, S.O.No.692(E) dated the 5th April, 2011, S.O No. 1754(E), dated the 28th July, 2011, S.O. No. 2609, dated 22th November, 2011, S.O No. 264(E), dated- 13th February, 2012, S.O No. 1150(E) dated-22th May, 2012, S.O No.1295(E), dated-6th June, 2012, S.O. No. 2039 (E), dated-5thSeptember,2012,S.ONo.2850(E),dated-7thDecember,2012,S.O.No.592(E),dated-8thMarch,2013,
S.O. No. 945(E), dated-8th April, 2013, S.O. No. 2287(E), dated-26th July, 2013, S.O No. 3489(E), dated-26th November,2013,S.ONo.21(E),dated-3rdJanuary,2014,S.ONo.561(E),dated-26thFebruary,2014,S.O.No.1190(E), dated-1st June, 2014, S.O. No. 2003(E), dated-9th August, 2014, S.O. No. 137(E), dated-12th January, 2015, S.O. NO.1783(E), dated-30th June, 2015, S.O. No. 2453(E), dated-7th September, 2015 and S.O. No. 1953(E), dated-2nd June,2016

केन्द्रीय प्रदूषण नियंत्रण बोर्ड
CENTRAL POLLUTION CONTROL BOARD
(पर्यावरण एवं वन मंत्रालय, भारत सरकार)
(MINISTRY OF ENVIRONMENT & FORESTS, GOVT. OF INDIA)

F. No. LB/99/7/2021-INST LAB-HO-CPCB-HO/ Pvt-211 **Dated: 16th February 2022**

13622

Speed Post

To,

The Managing Director
M/s Green Envirosafe Engineers and Consultant Pvt. Ltd.,
A-7/2/C 11, Capital City, Talawade- Chakan Road,
Chakan MIDC, Phase-IV, Village- Nighoje, Tal- Khed,
Dist. Pune-410501, Maharashtra.

Subject: Recognition of M/s Green Envirosafe Engineers and Consultant Pvt. Ltd., A-7/2/C11, Capital City, Talawade- Chakan Road, Chakan MIDC, Phase-IV, Village- Nighoje, Tal- Khed, Dist.- Pune-410501, Maharashtra as Environmental laboratory under the Environmental (Protection) Act, 1986.

Sir,

I am directed to refer to your application dated 16/12/2021 for the recognition of your laboratory Environmental (Protection) Act, 1986. Based on the recommendations of the expert committee for recognition of Environmental laboratories in its 67th meeting held on 14th January & 20th January 2022 and your acceptance of the revised terms and conditions at Annexure-III & IV of the guidelines for recognition of environmental laboratories, CPCB approves the renewal of recognition of **M/s Green Envirosafe Engineers and Consultant Pvt. Ltd., Pune-410501, Maharashtra** as shall be notified in the Gazette of India. **Considering the current validity of mandatory accreditation/ certifications of the laboratory, this recognition shall be valid up to 04/12/2022.**

2. As sought in your **aforementioned M/s Green Envirosafe Engineers and Consultant Pvt. Ltd., Pune-410501, Maharashtra,** may undertake the following tests.
   i. **Physical Tests-**Conductivity, Colour, pH, Fixed & Volatile Solids, Total Solids, Total Dissolved Solids, Total Suspended Solids, Turbidity, Temperature, Velocity & Discharge Measurement of industrial effluent stream, Flocculation test (Jar test), Odour, Salinity, Settleable solids and Sludge Volume Index (SVI).
   ii. **Inorganic (General and non-metallic):** Acidity, Alkalinity, Ammoniacal Nitrogen, Chloride, Chlorine residual, Dissolved Oxygen, Fluoride, Total hardness, Total Kjeldahl Nitrogen (TKN), Nitrite Nitrogen, Nitrate Nitrogen, Phosphate, Sulphate, Bromide, Carbon Dioxide, Chlorine Demand, Iodine, Sulphite, Silica, Cyanide and Sulphide.
   iii. **Inorganic (Trace metals):** Boron, Cadmium, Calcium, Chromium Total, Chromium Hexavalent, Copper, Iron, Lead, Magnesium, Mercury, Nickel, Potassium, Sodium, Sodium Absorption Ratio, Zinc, Arsenic, Aluminium, Beryillium, Barium, Lithium, Manganese, Selenium, Silver, Strontium, Tin, Antimony, Cobalt and Vanadium.
   iv. **Organics (General) and trace organics:** Bio-chemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Oil and Grease, Phenol, Pesticide (each) (Organo-chlorine and Organo Nitrogen-Phosphorus), Total Organic Carbon (TOC), Surfactants, Tanin & Lignin, Poly-Chlorinated Biphenyl (PCB's) each, Polynuclear Aromatic Hydrocarbons (PAH's) each, Organic Carbon (in solid) and Carbon/Nitrogen ratio.
   v. **Microbiological test:** Total Coliform, Faecal Coliform, *Faecal Streptococci, E. coli* and Total Plate Count.
   vi. **Toxicological Tests:** Bioassay method for evaluation of toxicity using fish, Measurement of toxicity factor using Daphnia or other Organism and Measurement of toxicity factor using zebra fish (dimensionless toxicity test).

'परिवेश भवन' पूर्वी अर्जुन नगर, दिल्ली–110032
'Parivesh Bhawan', East Arjun Nagar, Delhi - 110032
दूरभाष / Tel. : 43102030, फैक्स / Fax : 22305793, 22307078, 22307079, 22301932, 22304948
ई–मेल / e-mail :cpcb@nic.in वेबसाईट / Website : www.cpcb.nic.in

Contd.

vii. **Biological Tests:** Benthic organism identification and count, Macrophytic identification, Planktonic identification count, Measurement of various diversity index, Chlorophyll and P/R Ratio.

viii. **Characterization of Hazardous waste:** Preparation of Leachate (TCLP/Water extract), Corrosivity, Ignibility (Flash Point), Reactivity, Toxicity and Measurement of heavy metals/ pesticides in the waste and leachate.

ix. **Soil/sludge/Sediment and solid waste:** Boron, Cation Exchange Capacity (CEC), Electrical Conductivity, Nitrogen (available), Organic Carbon/matter (Chemical method), pH, Phosphorous (available), Phosphate (ortho), Phosphate (total), Potassium, SAR in soil extract, Sodium, Soil moisture, TKN, Calorific Value, Ammonia, Bicarbonate, Calcium, Calcium Carbonate, Chloride, Colour, Exchangeable Sodium Percentage (ESP), Heavy Metals, Magnesium, Nitrate, Nitrite, PAH, Pesticide, Potash (Available), Sulphate, Sulphur, TOC, Total water soluble salt and Water holding capacity.

x. **Ambient Air/ fugitive emissions:** Nitrogen Dioxide (NO_2), Sulphur Dioxide (SO_2), Total Suspended Particulate Matter, Respirable Suspended Particulate Matter PM_{10}, Ammonia, Carbon Monoxide, Non Methane Hydrocarbon, Lead, Methane, Ozone, Benzene Toluene Xylene (BTX), Polycyclic Aromatic Hydrocarbon (PAH) Benzo-a-pyrene and others, $PM_{2.5}$ and Volatile Organics Carbon.

xi. **Stack gases/ source emission:** Particulate Matter, Sulphur Dioxide, Velocity & Flow, Carbon Dioxide, Carbon Monoxide, Temperature, Oxygen, Oxides of Nitrogen, Acid mist, Ammonia, Chlorine, Fluoride (Particulate), Fluoride (Gaseous), Hydro Chloric Acid, Total Hydrocarbon, Hydrogen Sulphide, Carbon Disulphide and Mercaptan.

xii. **Noise level:** Noise level measurement (20-140 dba) and Ambient Noise and Source specific Noise.

xiii. **Meteorological Monitoring:** Ambient Temperature, Wind direction, Wind speed, Relative Humidity and Rainfall.

3. Further, the following analysts have been approved for recognition as government Analysts.
   i. Sh. Vinod Hande,
   ii. Dr. Satish Kulkarni,
   iii. Ms. Sneha Sudhakar Hande

4. The laboratory shall compulsorily participate in the Analytical Quality Exercise conducted by the Central Pollution Control Board (CPCB to ascertain the capability of the laboratory and analysis carried out and shall submit quarterly progress report to CPCB.

5. The surprise inspection/periodic surveillance of the recognized environment laboratory will be undertaken by CPCB to assess its proper functioning systematic operation and reliability of data generated at the laboratory.

6. It is also mandatory for the laboratory to have requisite accreditations of the ISO: 17025 (NABL) and ISO:45001 (OH&SMS) and its renewal as per accreditation rules. This recognition is subject to such accreditations and renewals as applicable. The laboratory is required to apply online for further renewal of recognition through CPCB web portal after renewal of the mandatory accreditations / certifications concerned.

7. The laboratory should compulsorily follow the accepted terms and conditions. In case of serious non-compliance of any of the terms and conditions, the laboratory may be black listed for a minimum period of two years and civil/criminal proceedings, as applicable, may be initiated for performing functions on behalf of the Government in an unauthorized manner.

Yours faithfully,

16/12/2022

(Namita Mishra)
Scientist-D & Divisional Head
Instrumentation laboratory

CRESCENT QUALITY CERTIFICATION PVT. LTD.

Certificate of Registration

This is to certify that the Quality Management System of

GREEN ENVIROSAFE ENGINEERS & CONSULTANT PVT. LTD.

At Address

M/S. GREEN ENVIROSAFE ENGINEERS & CONSULTANT PVT. LTD.,
PLOT NO. A - 7/2/C-11, MIDC, CHAKAN INDL. AREA PH-IV,
NIGHOJE, TAL - KHED, DIST - PUNE.

Has been Assessed by Crescent Quality Certification Pvt. Ltd. and Deemed to comply with the requirement of

ISO 9001:2015

This Certificate is Valid for the activities specified below:

ENVIRONMENT CONSULTANCY SERVICES PROVIDER,
ENVIRONMENT TESTING WATER & WASTE WATER TESTING
AIR MONITORING & TESTING, FOOD TESTING & ANALYSIS

Registration No.: CQCPL/QMS/0221/6701
Certificate Issue Date: 22.02.2021
1st Surveillance: 02.2022

Certificate Expire Date: 21.02.2024
2nd Surveillance: 02.2023

Managing Director

CRESCENT QUALITY CERTIFICATION PVT. LTD.
B-1005, Gundecha Symphony, Veera Desai Road, Andheri West, Mumbai - 400 053, India
Phone: +919820429510, Email: info@crescentqualitycerfification.com,
Website: www.crescentqualitycertification.com

For Current validity of this certificate, please visit our website

CRESCENT QUALITY CERTIFICATION PVT. LTD.

Certificate of Registration

This is to certify that the Enviornment Management System of

GREEN ENVIROSAFE ENGINEERS & CONSULTANT PVT. LTD.

At Address

M/S. GREEN ENVIROSAFE ENGINEERS & CONSULTANT PVT. LTD.,
PLOT NO. A - 7/2/C-11, MIDC, CHAKAN INDL. AREA PH-IV,
NIGHOJE, TAL - KHED, DIST - PUNE.

Has been Assessed by Crescent Quality Certification Pvt. Ltd. and Deemed to comply with the requirement of

ISO 14001:2015

This Certificate is Valid for the activities specified below:

ENVIRONMENT CONSULTANCY SERVICES PROVIDER,
ENVIRONMENT TESTING WATER & WASTE WATER TESTING
AIR MONITORING & TESTING, FOOD TESTING & ANALYSIS

Registration No.: CQCPL/EMS/0221/1572
Certificate Issue Date: 22.02.2021
1st Surveillance: 02.2022

Certificate Expire Date: 21.02.2024
2nd Surveillance: 02.2023

Managing Director

CRESCENT QUALITY CERTIFICATION PVT. LTD.
B-1005, Gundecha Symphony, Veera Desai Road, Andheri West, Mumbai - 400 053, India
Phone: +919820429510, Email: info@crescentqualitycerfification.com,
Website: www.crescentqualitycertification.com

For Current validity of this certificate, please visit our website

CRESCENT QUALITY CERTIFICATION PVT. LTD.

Certificate of Registration

This is to certify that the

Occupational Health And Safety Management System of

GREEN ENVIROSAFE ENGINEERS & CONSULTANT PVT. LTD.

At Address

M/S. GREEN ENVIROSAFE ENGINEERS & CONSULTANT PVT. LTD.,
PLOT NO. A - 7/2/C-11, MIDC, CHAKAN INDL. AREA PH-IV,
NIGHOJE, TAL - KHED, DIST - PUNE.

Has been Assessed by Crescent Quality Certification Pvt. Ltd. and Deemed to comply with the requirement of

ISO 45001:2018

This Certificate is Valid for the activities specified below:

ENVIRONMENT CONSULTANCY SERVICES PROVIDER,
ENVIRONMENT TESTING WATER & WASTE WATER TESTING
AIR MONITORING & TESTING, FOOD TESTING & ANALYSIS

Registration No.: CQCPL/OHSMS/0221/5518
Certificate Issue Date: 22.02.2021
1st Surveillance: 02.2021

Certificate Expire Date: 21.02.2024
2nd Surveillance: 02.2023

Managing Director

CRESCENT QUALITY CERTIFICATION PVT. LTD.
B-1005, Gundecha Symphony, Veera Desai Road, Andheri West, Mumbai - 400 053, India
Phone: +919820429510, Email: info@crescentqualitycerfification.com,
Website: www.crescentqualitycertification.com
For Current validity of this certificate, please visit our website

DECLARATION

This is to state that the 'Executive Summary &Draft EIA Report' submitted herewith has been prepared in respect of our Proposedexpansion of 60 to 200 KLPD by using C / B Heavy Molasses / Sugarcane Syrup, Sugar Factory from 5000 to 12000 TCD & Co-generation Plant from 25 to 60 MW by – **Babanraoji Shinde Sugar and Allied Industries Ltd., (BSSAIL)**

Information, data and details presented in this report are true to the best of our knowledge. Primary and secondary data have been generated through actual exercise conducted from time to time as well as procured from the concerned Govt. offices/departments has been incorporated here subsequent to necessary processing, formulation and compilation.

Shri. Kailas Babasaheb Mate
(Whole Time Director)
Babanraoji Shinde Sugar and Allied IndustriesLtd.,
A/p: Turkpimpari, Tal.: Barshi,
Dist.: Solapur, Maharashtra.

Project Proponent

Dr. Sangram P. Ghugare
(CMD)
M/s. Equinox Environments (I) Pvt. Ltd., (EEIPL)
F-11, Namdev Nest 1160–B, 'E' Ward
Sykes Extension opp. of Kamala College,Kolhapur 416 001
Environmental Consultant

BABANRAOJI SHINDE SUGAR & ALLIED INDUSTRIES LTD. Regd. No. U15420PN 2011PLC 138268