P-374-DSPL-DISTILLERY-12019 (Revision - 01)

SUMMARY ENVIRONMENTAL IMPACT ASSESSMENT (EIA) REPORT

(IN ENGLISH AND MARATHI)

FOR

PROPOSED 100 KLPD MOLASSES BASED DISTILLERY

BY



M/S. DECCAN SUGAR PRIVATE LTD.

DEORAO PATIL NAGAR, MANGRUL, POST: BELORA, TAL. & DIST.: YAWATMAL, MAHARASHTRA STATE

PREPARED BY



EQUINOX ENVIRONMENTS (I) PVT. LTD.

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September - 2019

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Factory : Devrao Patil Nagar, Mangrul, Post Belora, Tq. & Dist. Yavatmal 445 105 (M.S.) Phone : 07232-261777, Fax : 07232-261666

(Formerly Sagar Wine Manufacturing & Marketing Pvt. Ltd.)

REF NO .: 283-A/2019-20

DATE: 19.08.2019

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 proposed100 KLPD molasses based distillery by -M/s. Deccan Sugar Private Ltd., located at Deorao Patil Nagar, Mangrul, Post: Belora, Tal. & Dist: Yavatmal, Maharashtra State.

Dear Sir,

We -M/s. Deccan Sugar Private Ltd. has decided to go for an establishment of 100 KLPD Molasses based Distillery located at Deorao Patil Nagar, Mangrul, Post: Belora, Tal. & Dist: Yavatmal, Maharashtra State.

Accordingly, an application in Form -1 format was submitted to the 'Ministry of Environment, Forests and Climate change (MoEFCC); New Delhi' for grant of ToR's on 15.02.2019.Subsequently, standard ToR's were granted on12.03.2019. Refer **Enclosure** – I for copy of ToR letter. In the ToR letter, directions were given to conduct Public Hearing (PH) w.r.t. our proposed distillery project. Now, in order to conduct Public Hearing, we hereby are submitting all the relevant documents and information to your office.

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





Factory : Devrao Patil Nagar, Mangrul, Post Belora, Tq. & Dist. Yavatmal 445 105 (M.S.) Phone : 07232-261777, Fax : 07232-261666

(Formerly Sagar Wine Manufacturing & Marketing Pvt. Ltd.)

Also, a Demand Draft of Rs. 1,00,000/- (Rs. One Lakh only) Bearing No. 607648 drawn on State Bank Of India. Chandrapur dated 16.08.2019 towards the Public Hearing charges, as decided by the govt., has been presented herewith.

Please do the needful and oblige.

Thanking you.

Yours faithfully,

iway

Mr. B. I.Mujawar (General Manager) Deccan Sugar Private Limited

Encl.:1. Executive Summary of project

2. A Draft EIA Report

3. A D.D. bearing No. 607648 dated 16.08.2019 drawn on State Bank Of India .Chandrapur



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Summary of Draft EIA Report for Establishment of 100 KLPD Molasses Based Distillery in the Existing Premises of DECCAN SUGAR PVT. LTD. (DSPL),

Deorao Patil Nagar, Mangrul, post Belora, Tal. & Dist.: Yavatmal, Maharashtra.

1) THE PROJECT

Deccan Sugar Pvt. Ltd. (DSPL), is located at Deorao Patil Nagar, Mangrul, post Belora, Tal. &Dist.: Yavatmal, Maharashtra. DSPL management have planned to establish a 100 KLPD molasses based distillery and 4 MW co-gen plant in the existing premises of 2500 TCD sugar factory and 5 MW co-gen plant.

As per Environmental Impact Assessment (EIA) Notification No. S. O. 1533 (E) dated 14.09.2006 and amendments thereto issued by the Ministry of Environment, Forest and Climate Change (MoEFCC); New Delhi. Accordingly, project comes under Activity 5(g) – distilleries; **Category A**. Standard ToRs has been issued by MoEFCC vide letter No J-11011/53/2019-IA II (I) dated 12.03.2019 to DSPL. Now, as per the latest amendment in 'EIA Notification No. S.O. 1960 (E)' dated 13.06.2019; the project comes under activity 5(g)(i) – Distillery; comes under Category 'B'. Proposed establishment of distillery would be formulated in such a fashion and manner so that the utmost care of Safety Norms and Environment Protection shall be taken. Details of capital investment are given in table 1.

No	Industrial Unit	Capital Investment (in Rs. Cr.)			
140.		Existing	Proposed	Total	
1	Sugar Factory	30.71		30.71	
2	Distillery		152.00	152.00	
			Total	182.71	

Table 1 Project Investment Details

2) THE PLACE

Proposed establishment of distillery shall be carried out at existing premises of DSPL. Total land acquired by the industry is 91.3 Ha. Area allocated for proposed distillery is 9.15 Ha. Refer Appendix – A of EIA report for plot layout plan of DSPL. Area break-up is presented at table 2. A No Objection Certificate (NOC) for the proposed establishment project has been obtained from the Mangrul Grampanchayat. Same is presented at certificates and other documents of the Draft EIA report.

Table 2 Area Break up

No.	Description	Area (Sq. M.)
Α	Existing Sugar Factory (Built up area)	
1	Residential Colony	12,802.00
2	Sugar Factory	30,501.02
3	Area under Roads	20,500.00
	Total Built up area	63,803.02
В	Proposed Distillery (Area Allocated)	91,500.00
С	Distillery Built up Area	20,500.00
1	Green Belt Area	
2	Existing Green Belt (25 % of Total plot area)	2,30,247.00
	Proposed Green Belt (8 % of Total plot area)	73,040.00
D	Total Green Belt (33 % of Total plot area)	3,03,287.00
	Open Space	5,25,409.98

3) THE PROMOTERS

DSPL promoters are well experienced in the field have made a thorough study of entire project planning as well as implementation schedule. Names and designations of the promoters are as under-

No.	Name	Designation
1	Mr. Sadhuram Patladhamal Wadhwani	Chairman
2	Mr. Sanjay Sadhuram Wadhwani	Director
3	Mr. Manoj Sadhuram Wadhwani	Director
4	Mr. B. I. Mujawar	General Manager
5	Mr. I. H. Thawrani	Finance Manager

Table 3 List of Promoters

4) THE PRODUCTS

Details of products that are manufactured under proposed distillery as well as existing sugar factory are represented in Table 4.

Industrial unit	Description	Quantity
Distillery (Proposed	Product	
100 KLPD)	Ethanol/ ENA/ RS (KL/M)	3,000
Co-gen plant	Electricity (MWH)	4
(4 MW)	By-product	
	Carbon Di-oxide (CO ₂) Gas (MT/M)	2,265
Sugar Factory	Product	
(Existing	White Sugar (10%)* (MT/M)	7,500
2500 TCD)	Electricity (MWH)	5
Co-gen plant By-product		
(5 MW)	Bagasse (30%)* (MT/M)	22,500
(··)	Molasses (4.5%)* (MT/M)	3,360
	Press mud (4.5%)* (MT/M)	3,360

Table 4 Product & By-product of for integrated Complex

* - Percent of 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 DSPL decided for establishment of distillery.

6) MANUFACTURING PROCESS

Details of manufacturing process and flow chart for sugar factory and distillery are given in Chapter 2, figure 2.3 and Figure 2.4 of the EIA Report. Manufacturing process of integrated project complex is presented at Figure 1.

Figure 1 Integrated Manufacturing Process Operations



7) ENVIRONMENTAL ASPECTS

DSPL 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

Water required for proposed distillery will be 1088 CMD. Out of this 276 CMD will be fresh water taken from Goki dam left canal, 794 CMD will be treated water from distillery CPU and 18 CMD will be STP treated water used for gardening and development of green belt. Total 75% recycle water will be used in distillery. For existing sugar factory total 1192 CMD water is required. Out of this 186 CMD is fresh water taken from ground water resource and 1006 CMD is recycled water from sugarcane condensate which accounts for 84 %. More details about water budget are presented in EIA report at Chapter 2 Section 2.7.1

No.	Description	Water Consumption	Effluent Generation	Treatment
1.	Domestic	#5	4	Proposed STP
2.	Industrial			
	a. Process		Raw Spent wash -	Conc. in MEE &
	(Fermentation		800	Incinerated in
	dilution)	*70/	Conc. Sp.Wash - 160	incineration boiler
		194		(1.6 KL/ KL)
			MEE condensate - 640	Treat in
			Spent lees - 142	Proposed CPU
	b. Cooling Makeup	#170	20	
	c. Boiler Makeup	[#] 84	16	
	d. Lab &Washing	#5	5	
	e. D. M. Backwash	#10	10	
	f. Ash Quenching	[#] 2	0	
	Industrial Total	1065 ([#] 271 + *704)	Raw Spent wash - 800	
	(a+b+c+d+e+f)	(75% 271 + .794)	Conc. Sp. Wash-160	
		(1570 Recycle)	Other effluent – 833	
3.	Gardening & Green Belt	^{\$} 18		
		1128		
	Grand Total	([#] 276+*794+ ^{\$} 18)		
		(72 % Recycle)		
	Fresh Water Consumption	2.76 KL/KL of Alcohol		
	Norm- 10 KL/KL of Alcohol		1 C IZI /IZI - £ A1-, 1 1	
	Effluent generation		1.6 KL/KL of Alcohol	

Table 5 Details of Water Consumption in Distillery of DSPL (M³/D)

Note: # - Actual quantity of fresh water taken from Goki dam left canal, Treated effluent from Distillery CPU, \$ - ETP treated water used for gardening & Green belt

Table 6 Details of Water Consumption in Existing Sugar Factory of DSPL (M³/D)

No.	Description	Water Consumption	Effluent Generation	Treatment
1.	Domestic	[#] 20	16	Proposed STP
2.	Industrial			
	a. Process	* 669	143	
	b. Cooling Makeup	* 100	10	Treated in
	c. Boiler Makeup	# 154	15	existing
	d. DM Backwash	# 12	12	ETP (74 Lit.
	e. Lab & Washing	* 5	5	/ MT)
	f. Ash Quenching	*2	0	-
	Industrial Use	942 ([#] 166 +*776)	185	
	(a+b+c+d+e+f)	(82% Recycle)		
3.	Gardening & Green belt	*230		
	Crond Total (1+2+3)	1192 (#186+*1006)		
	Grand 10tal (1+2+3)	(84% Recycle)		
	Fresh Water Consumption – Norm- 100 Lit/MT of Cane Crushed	74.4 Lit. / MT		
	Fresh Water Consumption – Norm- 100 Lit/MT of Cane Crushed		74 Lit. / MT	

Note: 1. #- Fresh water taken from Bore well, * - Cane Condensate water,

b. Effluent Treatment

i) Domestic Effluent

Domestic effluent from existing sugar factory is to the tune of 16 M^3/D . same is treated in septic tank. After establishment of proposed distillery, total domestic effluent from DSPL campus shall be 20 M^3/D . Same will be treated in to proposed Sewage Treatment Plant (STP). Treated water from STP to the tune of 18 M^3/D will be used for development of green belt and gardening. Flow chart of proposed STP is presented at figure 4.

ii) Industrial Effluent

Effluent generated from proposed distillery activities would be in the form of spentwash, Spent Lees, MEE Condensate, Other effluents such as -cooling b/d, Boiler b/d, effluent from lab & washing. Raw spentwash – 800 M^3/D (8 KL/KL of alcohol) will be concentrated in Multiple (Five) Effect Evaporator (MEE). Concentrated spentwash – 160 M^3/D (1.6 KL/KL of alcohol) will be incinerated in incineration boiler along with coal. Spentlees - 142 M^3/D , condensate - 640 M^3/D and other effluents (cooling b/d, Boiler b/d, effluent from lab & washing, DM backwash) – 51 M^3/D will be treated in proposed Condensate Polishing Unit (CPU). Treated water from CPU will be recycled for dilution of molasses in distillery. Flow chart of proposed CPU is presented at figure 2.

Total trade effluent generated from existing sugar factory is 185 CMD. Same is treated in existing Effluent Treatment Plant (ETP) provided on site comprising of primary, secondary & tertiary unit operations. Treated effluent is supplied for watering of plantation under the green belt in own factory premises as well as on land of shareholders of factory for irrigation. Flow chart of sugar factory ETP is presented at figure 3.



Figure 2 - Flow Chart of Proposed CPU for Distillery



Figure 3 Flow Chart of Existing Sugar Factory ETP





B. Air Emissions

Under proposed establishment of distillery a incineration boiler of capacity 35 TPH will be installed on site. Coal blended with conc. spentwash will be used as fuel to the same. ESP will be installed as APC along with stack of 63 M height. Under proposed distillery a DG set of 625 KVA will be installed on site. Under existing sugar factory, two bagasse based boilers of 32 TPH capacities and two DG sets of 625 KVA and 160 KVA are installed on site. Boiler is provided with wet scrubber as Air Pollution Control (APC) equipment followed by stack height of 50 M AGL. HSD is used as fuel for DG sets. Further, D.G set would be operated only during power failure.

No.	Description	Details				
	_	Sugar Factory (Existing)		Distillery (Proposed)		
		Boiler	D. G	. Set	Boiler	D. G. Set
1	Capacity	32 TPH	625 KVA	160 KVA	35 TPH	625 KVA
		(2 Nos)				
2	Fuel type	Bagasse	HSD	HSD	Coal/Bagasse +	HSD
					Conc. Sp.Wash	
3	Fuel Quantity	552	70 lit/Hr.	25 lit/Hr.	75 (MT/D) +	40 lit/Hr.
		MT/D			216 (MT/D)	
4	Material of construction	R.C.C.	M.S	M.S	RCC	M.S
5	Shape (round/rectangular)	Round	Round	Round	Round	Round
6	Height(above ground level)	50 M	5 M	5 M	63 M (AGL)	5 M (ARL)
		(AGL)	(Common)	(Common)		
			(ARL)	(ARL)		
7	APC Equipment to stack	Wet			ESP	
		Scrubber				

Table 7 Details of Boiler and Stack in DSPL

C. Noise Pollution Aspect

1. Sources of Noise

- i. Existing sugar factory; noise generating sources are the boiler house, turbine rooms, cane crushing section and mill house, etc.
- ii. 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.
- iii. 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 80dB(A).
- iv. Adequate green belt would be augmented 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 Waste

Industrial Unit	Category	Description	Quantity (MTPM)	Disposal
Sugar Factory	Category-5.1	Spent oil	0.3	Burnt in boiler

Table 8 Details of Hazardous Waste

No any hazardous waste will be generated from distillery.

E. Solid Wastes

No.	Unit	Waste Type	Quantity (MT/M)	Disposal	
1.	Distillery	Yeast Sludge	510	Incinerated in proposed	
		CPU sludge	24	distillery boiler	
		Boiler Ash	1440	Brick / Cement Industry	
2.	Sugar	Boiler Ash	331	Manure / Brick Manufactures	
	Factory	ETP sludge	5	Used as manure	

F. Odour Pollution

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

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 expansion as well as implementation of proposed project.

H. Environmental Management Cell (EMC)

DSPL is already having an EMC functioning under its Sugar factory. Members of 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-

No.	Name of Member	Designation	Number of Person(s)
1.	Mr. S. P. Wadhwani	Chairman	1
2.	Representative of Consultant	Environment Consultant	1
3.	Mr. S. S. Wadhwani	Director	1
4.	Mr. M. S. Wadhwani	Director	1
5.	Mr. B. I. Mujawar	General Manager	1
6.	Mr. B. M. Wadde	Chief Chemist	1
7.	Mr. S. T. Patwari	Chief Engineer	1

Table 10 Environmental Management Cell of DSPL

No.	Name of Member	Designation	Number of Person(s)
8.	Mr. Ramesh Sharma	General Manager (Distillery)	1
9.	Mr. S. D. Lad	Lab Incharge	1
10.	Mr. P. G. Gangamwar	Safety & Health Dept. Incharge	1

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

Table 11 Capital as well as O & M Cost (Existing & Proposed)

No	Description	Cost Comp	onent (Rs. in Lakhs)
INO.	Description	Capital	Annual O & M
Α	Existing Sugar Factory		
1	APC system to 32 TPH (2 No. Boilers) (wet scrubber &	60.0	3.0
	stack of 50 M)		
2	Existing Sugar Factory ETP	100.0	5.0
3	Noise Pollution Control	10.0	1.0
4	Environmental Monitoring & Management	20.0	2.0
5	Occupational Health & Safety	20.0	2.0
6	Green Belt Development	15.0	1.5
	Total (7.3% of Capital Investment of Rs. 3071 Lakhs)	225.0	14.5
В	Proposed Distillery		
1	APC system to 35 TPH incineration boiler, ESP & Stack	3500.0	350.0
	(Height 63 M)		
2	Spent wash storage tank, MEE, CPU, Piezometers	400.0	40.0
3	Proposed STP	10.0	1.0
4	Noise Pollution Control	15.0	1.0
5	Environmental Monitoring & Management	20.0	2.0
6	Occupational Health & Safety	25.0	3.0
7	Green Belt Development & Rain Water Harvesting	30.0	3.0
8	CER provision in 5 Years after grant of EC	380.0	0.0
	Total (29 % of Capital Investment of Rs.15200 Lakhs)	4380.0	400.0
	Grand Total (A + B) (25.2% of Capital Investment of Rs. 18,271 Lakhs)	4605.0	414.5

I.Rainwater Harvesting Aspect

- Total area of Plot 9,13,000.00 M²
- Total Open space $-5,25,410 \text{ M}^2$
- Average annual rainfall in the area = 911 mm.

► <u>Rooftop Harvesting</u>

- Roof Top harvesting area of 27,147 M²
- Roof Top harvesting yield is –19,993 M³

➢ <u>Surface Harvesting</u>

- Surface Harvesting area of 5,25,410 M²
- Surface harvesting yield is -28,71,891 M³

Hence, the total water becoming available after rooftop and surface harvesting would be -

Rooftop Harvesting + Surface Harvesting = Total RWH 19,993 + 28,71,891 = 28,91,884 M³ = 2892 ML

J. The Green Belt

Table 12 Area Details

No.	Description	Area (Sq. M.)
А	Total Built – Up (Existing + Proposed)	84,303.02
В	Open Space	5,25,409.98
С	Green Belt-	
	i. Existing (25 % of Total plot area)	2,30,247.00
	ii. Proposed (8 % of Total plot area)	73,040.00
	Total Green Belt (33 % of Total plot area)	3,03,287.00
	Total Plot area (A+B+C)	9,13,000.00

Criteria for Green Belt Development Plan

Emission of SPM, SO_2 is the main criteria for consideration of green belt development. Green belt development is provided to abate effects of the emissions of SPM & SO_2 . 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 in proposed green belt.

K. Socio-Economic Development

Socio economic study was carried out in 12 villages within 10 Km radious of DSPL was carried out with the help of an interview schedule. 33 questions in Marathi, which was drafted prior to and employed during the survey. Schedule was administered on 18th & 19th June, 2019. Refer Socio – economic profile in Chapter 3 of EIA report for detailed information of socio economic aspect.

- Most of the villages have basic facilities like preliminary educational infrastructure, public transportation, toilets and electricity.
- Most of the villages lacked availability of water, drainage system, solid waste as well as poor sanitation was visible. Domestic wastewater from all villages is directly released into the near water bodies.
- Water availability is critically less. Many water bodies are dried
- surveyed respondents were involved in various livelihood activities namely agriculture, agriculture labour, job, business and other occupations.
- Major crop grown in the area are Cotton, Soyabeen and Tur. Sugarcane is grown as per the availability of water.
- In the study area, high school level education facilities are available.
- Health facilities are satisfactory in study area.

Majority of the villagers stated the presence of public transportation facility, mandapam and toilets which is worth appreciating.

8) ENVIRONMENTAL MONITORING PROGRAMME

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

A. Land Use

Land use study requires data regarding topography, zoning, settlement, industry, forest, roads 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 13 Land Use/ Land Cover

No	Class	Area Ha	%
1	Built Up Area	527	1.68
2	Crop Land	10,755	34.24
3	Fallow Land	9,036	28.76
4	Water Bodies	95	0.30
5	Forest Area	7,892	25.12
6	Scurb Land	3,109	9.90
	Total	31,414	100

C. Meteorology

Methodology adopted for monitoring surface observations is as per the norms laid down by Bureau of Indian Standards (BIS) and the India Meteorology Department (IMD). On-site monitoring was undertaken for various meteorological variables in order to generate the data. Further, certain secondary meteorological data like temperatures, relative humidity, rainfall intensity etc. have been taken from IMD, Yavatmal. Meteorological parameters were monitored during the period February 2019 to April 2019. Details of parameters monitored, equipments 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 February - April – 2019 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. AAQ monitoring was conducted in the study area to assess the quality of air for PM₁₀, PM_{2.5}, SO₂, NO_x and CO. Various monitoring stations selected are shown in following table-

No.	Location	Direction From Site	Direction	Distance (Km)
A1	Industrial Site			
A2	Mangrul	Nearest Habitat	SW	1.86
A3	Bechkheda	Doumwind	NE	4.06
A4	Ramnagar	Downwind	SE	5.54
A5	Gangaon	Upwind	WNW	3.17
A6	Wai		SE	3.96
A7	Bham	Crosswind	NNE	2.54
A8	Belora		SSE	3.12

Table 14 AAQM Locations

Table 15 Summary of the AAQ Levels for Monitoring Season The season of the se

[February 2019 to April 2019]

		Location							
		Site	Mangrul	Bechkheda	Ramnagar	Gangaon	Wai	Bham	Belora
PM ₁₀	Max	69.70	59.20	56.10	54.30	54.00	59.40	54.00	54.60
$\mu g/M^3$	Min	60.20	50.00	50.20	50.20	50.00	50.30	50.10	50.10
	Avg	65.00	52.78	52.30	52.00	51.86	52.16	51.97	51.88
	98 Percentile	69.29	58.69	55.32	54.16	53.91	57.33	53.95	54.51
PM _{2.5}	Max	24.40	20.00	20.00	20.40	19.80	20.20	18.60	20.20
$\mu g/M^3$	Min	18.20	14.00	14.50	15.50	15.20	14.10	14.20	13.30
	Avg	21.14	17.25	17.11	17.65	17.41	17.27	17.05	16.84
	98 Percentile	24.31	19.82	19.86	20.03	19.75	19.79	18.46	19.74
SO_2	Max	28.80	19.80	19.60	19.90	20.40	19.80	19.80	19.40
$\mu g/M^3$	Min	25.00	15.10	15.00	15.20	15.20	15.10	15.00	15.00
	Avg	26.57	14.53	17.74	18.06	17.88	17.65	17.95	17.49
	98 Percentile	28.80	19.66	19.55	19.85	20.17	19.75	19.75	19.40
NOx	Max	28.50	24.80	24.80	24.90	25.20	24.60	25.40	24.90
$\mu g/M^3$	Min	24.00	20.00	20.10	20.20	21.80	21.10	21.00	21.10
	Avg	26.64	23.17	22.95	23.09	23.59	23.00	23.19	23.01
	98 Percentile	28.41	24.75	24.52	24.90	25.02	24.55	24.99	24.90
	Max	0.900	0.090	0.090	0.090	0.090	0.090	0.090	0.090
CO	Min	0.100	0.030	0.010	0.010	0.020	0.000	0.020	0.020
mg/M ³	Avg	0.708	0.073	0.063	0.059	0.061	0.057	0.064	0.067
	98 Percentile	0.900	0.090	0.090	0.090	0.090	0.090	0.090	0.090

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

Table 16 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)

Zona Station	$PM_{10} \ \mu g/M^3 \ PM_{2.5} \ \mu g/M^3$		g/M^3	$SO_2 \mu g/M^3$		NOx µg/M ³		$CO mg/M^3$		
Zone Station	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 nine locations for ground water were selected. Same are listed below

Station Code	Name of the Station	Distance (Km)	Direction
SW1	Upstream of Aran River	4.20	NW
SW2	Midstream of Aran River	2.45	SW
SW3	Downstream of Aran River	5.58	SE
SW4	Upstream of Nalla	1.12	SE
SW5	Downstream of Nalla	5.08	SSE
SW6	Pond near east side of site	0.30	SE
SW7	Canal Water	0.55	W

Table 17 Monitoring Locations for Surface Water

Table 18 Monitoring Locations for Ground Water

Station Code	Geographical Location	Distance (Km)	Direction
GW 1	20° 12' 00.62" N, 77° 59' 33.88" E	1.05	WSW
GW 2	20° 12' 30.73" N, 77° 59' 23.56" E	1.35	NW
GW 3	20° 11' 45.51" N, 77° 59' 14.85" E	1.73	SW
GW 4	20° 11' 29.03" N, 77° 59' 46.04" E	1.51	SSW
GW 5	20° 11' 54.26" N, 78° 00' 00.51" E	0.64	SSW
GW 6	20° 12' 31.20" N, 78° 00' 18.74" E	0.61	ENE
GW 7	20° 12' 18.72" N, 78° 00' 18.38" E	0.36	NNE
GW 8	20° 11' 56.22" N, 78° 00' 20.83" E	0.70	SE

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

F. Noise Level Survey

Study area of 10 Km radius with reference to the proposed project site has been covered for noise environment 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-

Station Code	Name of Station	Direction	Distance (Km)
N1	Project Site		
N2	Mangrul	SW	1.86
N3	Belura	SSE	3.12
N4	Wai	SE	3.96
N5	Bechkhera	NE	4.06
N6	Bham	NNE	2.54
N7	Sakurheti	NW	2.00
N8	Ramnagar	SE	5.54

Table 19 Noise Sampling Locations

Table 20 Ambient Noise Levels

No.	Location		Α	B(A)			
	Location	L_{10}	L ₅₀	L ₉₀	L _{eq(day)}	L _{eq(night)}	L _{dn}
1	Project Site	56.6	58.9	60.7	67.8	50.8	66.2
2	Mangrul	44.1	46.0	48.1	51.5	41.1	51.3
3	Belura	44.6	46.5	47.8	50.8	42.6	51.6

No.	Location	Average Noise Level in dB(A)					
		L ₁₀	L ₅₀	L ₉₀	L _{eq(day)}	L _{eq(night)}	L _{dn}
4	Wai	44.6	46.6	48.0	52.6	41.0	52.1
5	Bechkhera	44.6	47.6	49.0	52.8	43.0	52.9
6	Bham	44.4	46.0	47.5	51.6	40.8	51.3
7	Sakurheti	44.3	45.9	47.4	50.5	41.6	50.9
8	Ramnagar	45.3	47.2	48.7	51.1	43.6	52.2

G. Socio-Economic Profile

The survey of 12 villages within 10 Km study area of DSPL, taking the reference of census 2011. Survey was carried out with the help of a Simple Random Disproportionate Sampling and snowball Technique, comprising of 33 questions in Marathi. Chapter 3 may be referred for details of this aspect.

H. Ecology

Ecological survey for proposed 100 KLPD distillery molasses based distillery was conducted from early morning till evening on 18.06.2019. In biodiversity study random sampling method for flora, particularly trees, and opportunistic sighting method for fauna (Larsen and Viana, 2016) were followed. Out of the 33 villages within 10 km radius from the site, 14 villages were selected for the EB and questionnaire study, i.e. 8 villages within 5 km radius and 6 villages between 5 to 10 km radius. Chapter 3 may be referred for details of this aspect.

Observations

- 1. The study area is a mosaic of natural terrestrial ecosystems such as deciduous forest, scrub, grassland, fallow land, scrub land and manmade ecosystems i.e. agriculture, horticulture and wetlands such as Tanks at villages Kharad, Bham, Devgaon, Aran river and seasonal streams.
- 2. Due to the characteristic mosaic of micro natural and manmade terrestrial habitats the area represents good terrestrial biodiversity.
- 3. The undulating land forms numerous micro catchments network of seasonal streams on some small village tanks are constructed.
- 4. These wetlands are known to provide habitats for diverse aquatic biota and avifauna including migratory birds and support dependent terrestrial biodiversity throughout the year.
- 5. Also, local residents reported good number of biodiversity both in flora and fauna.

9) ADDITIONAL STUDIES & INFORMATION

Risks Assessment –

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

- 1. Increase in risk, caused by the presence of the plant to local community (i.e. neighboring public) should be negligible in comparison to the risk they already have in their daily life.
- 2. Work force on the plant should be expected to accept a potentially greater risk than 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.

10) ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

A. Impact on Topography

No major topographical changes are envisaged in the acquired area due to proposed distillery project. In acquired area, the changes would be due to 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 establishment activity is not envisaged, as emissions to the atmosphere, of flue gases with very high temperatures are not expected

C. Impact on Air Quality

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

i. Baseline Ambient Air Concentrations

24 hourly 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 February – April 2019 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.

Parameter	PM_{10}	PM _{2.5}	SO_2	NO _X	СО
Avg. Conc.	$69.29 \ \mu g/m^3$	24.31 μ g/m ³	$28.80 \ \mu g/m^3$	$28.41 \ \mu g/m^3$	0.90 mg/m^3
NAAQS	$100 \ \mu g/m^3$	$60 \ \mu g/m^3$	$80 \ \mu g/m^3$	$80 \ \mu g/m^3$	4 mg/m^3

 Table 21 Baseline Concentrations(98 Percentile)

ii. Air Polluting Sources

As discussed above under existing activity of sugar factory operations, 1 boiler of 32 TPH capacity and 2 DG set of 625 KVA and 160 KVA are installed on site. Further, under proposed distillery activities; a incineration boiler of 35 TPH and DG set of 625 KVA would be installed.

D. Impact on Water Resources

i. Impact on Surface Water Resources & Quality

Surface water along with recycled water will be used to meet water requirment of proposed distillery. Effluent from distillery in the form of spentlees (142 CMD), MEE condensate (640 CMD) and other effluents (51 CMD) will be treated in proposed CPU. Industrial effluent from sugar factory (185 CMD) is treated in existing ETP. 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 under Section 2.7.1

ii. Impact on Ground Water Resources & Quality

Ground water is used as source of fresh water for its existing sugar factory. After establishment of distillery, DSPL will recharge harvested rain water to bore well, it will results in to increase in ground water level of that area. 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. Wet scrubbers are installed to existing boilers. ESP will be installed to proposed incineration boiler. Boiler ash from existing boilers is used as manure or given to brick manufacturer while boiler ash of proposed incineration boiler will be given to brick/ cement industry. CPU sludge and yeast sludge from distillery will be incinerated in incineration boiler. 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. It is quite obvious that the acceptable noise level for the latter case is less than the former case. Ear of workers can get damage. In long exposure, workers can get nerves system affected due to noise

G. Impact on Land Use

Present use of the project land is industrial wherein the sugar factory have already been established. The area was kept vacant for establishment of distillery. 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

Around factory site there is small water tank at North-East side, River Aran at 1.5 km in south, a natural stream just at 200 M, a water canal along the part of south boundary of factory and probably these water-bodies may carry leachate, industrial effluents, through agriculture during crushing season. If not controlled the proposed project when fully operational may initiate additional pollution in the area. In case of discharge of untreated wastewater from the industry in surrounding area can cause adverse environmental impact on the aquatic habitats and its biodiversity. In case of air pollution, the aggravated SPM load will have potential negative impact particularly on avifauna, surrounding forests, food crops and local population. The details in respect of impacts on ecology and biodiversity are described in Chapter 3 at Section 3.12.

I. Impact on Historical Places

No any historical place comes within 10 Km radius of study area.

11) SALIENT FEATURES OF EMP

Following routine monitoring programme as detailed in Table 26 shall be implemented at site. Besides to this monitoring, the compliances to all Environmental Clearance (EC) conditions and regular permissions from CPCB /MoEFCC shall be monitored and reported periodically.

No.	Description	Location	Parameters	Frequency	Conducted by
1	Ambient Air Quality	Upwind-1, Downwind-2 (Near Cane Yard, Near ETP, Near Alcohol Plant)		Monthly	
		Study area - (Villages namely – Bham, Heti, Gangaon, Ramnagar, Taroda, Mangrul, Belora, Wai, Bechkheda)	PM ₁₀ , PM _{2.5} , SO ₂ , NOx, CO.	Quarterly	
2	Work Zone Air Quality	4 Locations (Mill section, boiler area, Fermentation section, Sugar bagging section, Distillation section)		Monthly	
3	Fugitive Emissions	Ethanol storage area, Distillation column, Bagasse yard	VOC	Monthly	
4	Stack Emissions	Boiler – 2 Nos. (Sugar factory & Distillery boiler), 3 D.G Sets	SPM, SO ₂ , NOx	Monthly	
5	Ambient Noise	5 Locations (Near main gate, Near ETP, near Sugar godown, Near Distillation section, Near fermentation section)	Spot Noise Level recording; Leg(n),	Monthly	
	Work zone Noise	Premises – 5 Nos (Mill section, Distillation section, Boiler, DG set, Turbine section)	Leq(d), Leq(dn)	Monthly	MoEFCC & NABL Approved
6	Effluent	Treated, Untreated	pH, SS, TDS, COD, BOD, Chlorides, Oil & Grease, Sulphates,	Monthly	External Lab.
7	Drinking water	Factory canteen / Residential Colony	Parameters as per drinking water Std IS:10500	Monthly	
8	Soil	8 locations within 5 Km (Villages - Bham, Heti, Gangaon, Ramnagar, Taroda, Mangrul, Belora, Wai, Bechkheda)	pH, Salinity, Organic Carbon, N, P, K	Quarterly	
9	Water Quality (Ground Water & Surface Water)	Locations in study area – (Ground Water- Bham, Heti, Mangrul, Gangaon, Wai, Taroda, Belora, Shelu, Bechkheda Surface Water- Aran river, Kharad Talav)	Parameters as per CPCB guideline for water quality monitoring – MINARS/27/2007- 08	Quarterly	
10	Waste	Implement waste management	Records of Solid	Twice in	Bv DSPL

Table 22 Plan for Monitoring of Environmental Attributes in and around industry

No.	Description	Location	Parameters	Frequency	Conducted by
	management	plan that Identifies and characterizes every waste associated with proposed and expansion activities and which identifies the procedures for collection, handling & disposal of each waste arising.	Waste Generation, Treatment and Disposal shall be maintained	a year	
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, fire fighting mock drills	Twice a year	By DSPL
12	Health Check up	Employees and migrant labour health check ups	All relevant health checkup parameters as per factories act.	Once in a Year	By DSPL
13	Green Belt	Within Industry premises as well as nearby villages	Survival rate of planted sapling	In consultation with DFO.	By DSPL
14	CER	As per activities		Six Monthly	By DSPL



Factory :

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(Formerly Sugar Wine Manufacturing & Marketing Pvt. Ltd.)

DECLARATION

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This is to state that the 'Executive Summary & Draft EIA Report' submitted herewith has been prepared in respect of our proposed 100KLPD molasses based distilleryby –Deccan Sugar Private Limited (DSPL), Deorao Patil Nagar, Mangrul, post Belora, Tal. &Dist.: Yavatmal, Maharashtra.

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.

NAWAY

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Project Proponent

Fogur C.

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