

**SUMMARY ENVIRONMENTAL IMPACT ASSESSMENT (EIA) REPORT  
FOR**

Proposed 120 KLPD Molasses / Syrup to Ethanol Based Distillery  
along with 2.5 MW Co-gen Unit

BY

**M/s. MVK Agro Food Product Ltd.**

Gat no. 44, 45 & 46, Kusumnagar Village, Waghawada, Umri,  
Nanded, Maharashtra.

Prepared By

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## EXECUTIVE SUMMARY

### 1.0 Introduction

The proposed activity of molasses/syrup based distillery will be established by M/s MVK Agro Food Product Ltd.; the company is registered under the provision of Companies Act, 2013 Bearing Corporate Identity no: U15316MH2018PLC304795, dated: 02.02.2018. The copy of company registration is attached as **Annexure-1**. The registered office of the company is located at 20, Nava Mondha, Umari and District Nanded in state of Maharashtra.

### 2.0 Project Location

The proposed activity of distillery unit will be held on existing company premises engaged in manufacturing of sugar and co-gen activity at Gut no. 44, 45 & 46, Kusumnagar Village, Waghalwada, Umri, Nanded, Maharashtra.

As per geographical co-ordinates of the project site, the proposed activity is covered under SOI Toposheet no- 56F/9, while the study area of the project (10 km radius) is falling under SOI toposheet no: 56F/9, 56F/13, 56E/12 & 56E/16. The project is located at elevation of 387 meters above mean sea.

### 3.0 Project Description

Currently, project proponent has experience in running 2500 TCD sugar unit with 3.0 MW Co-gen plants. It shall be noted that, the proposed 120 KLPD distillery will be established on the vacant plot of existing Sugar and Co-gen unit.

As per Environmental Impact Assessment Notification published by MoEF&CC vide S.O. 1533 dated 14<sup>th</sup> September, 2006 and its amendments till date, the proposed activity of the company requires prior Environmental Clearance as proposed activity is falling under schedule 5(g) of the EIA notification; since it is an Molasses based distillery with production rate of 120 KLPD, the project is to be appraised by EAC as Category A project.

Salient features of proposed project are presented in **Table No. 1**.

**Table 1: Salient Features of Project**

Sr. No.	Component	Details
1	Name & Address of Company	M/s MVK Agro Food Product Ltd. Gut no. 44, 45 & 46, Kusumnagar Village, Waghalwada, Umri, Nanded, Maharashtra.
2	Product Type	Ethanol Manufacturing using Molasses and Cane Syrup
3	Project Type	New

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4	Schedule of project as per EIA Notification, 2006	5(g)	
5	Category of Project*	'A'	
		* - Applicability of General Condition - No Any Since the project is for manufacturing of molasses based ethanol with >100 KLPD capacity, the project will be appraised as 'A' Category project	
<b>Plot Area Details</b>			
6	<b>Particulars</b>	<b>Area in Sq. m.</b>	<b>% of Total Plot Area</b>
a	Green Belt	30,975.00	37.00
b	Parking Area	12,425.00	15.00
c	Total Built-up Area	23,285.00	28.00
d	Area Under Internal Roads	8,283.00	10.00
f	Open Space	7,862.00	10.00
g	<b>Total Plot Area</b>	<b>82,830.00</b>	<b>100.00</b>
<b>Production Details</b>			
7			
a	Rectified Spirit (RS)/ Extra Neutral Alcohol/ Ethanol	120 KLPD	
b	By-product	Fusel Oil : 0.24 Tons/Day CO <sub>2</sub> Gas : 70 Tons/Day	
<b>Budgetary Estimation</b>			
8			
a	Project Cost (Indian Rs.)	110.50 Crore	
b	EMP Cost (Indian Rs.)	Capital: 2996.5 Lakh, Recurring/Annum: 178.43 Lakh	
<b>Power Requirement</b>			
9			
a	Proposed Connected Load	2.5 MW	
b	Source	In-House TG Set Turbine	
<b>Fuel Requirement</b>			
10			

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a	Baggase & Biogas	212.17 MT/Day & 17500 M <sup>3</sup> /Day
b	High Speed Diesel	73 l/hr.
<b>11 Diesel Generator (D.G.) Details</b>		
	Capacity & No.	2 x 160 kVA
<b>12 Boiler Details</b>		
a	Steam Boiler	1 x 30 TPH
<b>13 CO<sub>2</sub> Bottling Plant</b>		
	CO <sub>2</sub> Bottling Plant Capacity	70 TPD
<b>14 Stack Details</b>		
a	Boiler Stack (from ground level)	<b>40 meters</b> <b>(APCD: ESP)</b>
c	D.G	2 X Stack of 2.6 m above roof for 160 kVA D.G.
15	Man Power	Skilled: 60 Unskilled: 40 Total: 100
<b>16 Water Requirement</b>		
	<b>Particular</b>	<b>Quantity (m<sup>3</sup>/day)</b>
	During Molasses Based Production	1 <sup>st</sup> Cycle for Distillery unit: 2387.9 2 <sup>nd</sup> Cycle for Distillery unit: 468.8
	During Cane Syrup Based Production	1 <sup>st</sup> Cycle for Distillery unit: 1965.9 2 <sup>nd</sup> Cycle for Distillery unit: 479.8
<b>17 Effluent Load on CPU</b>		
	<b>Particulars</b>	<b>Quantity (m<sup>3</sup>/day)</b>
	During Molasses Based Production	1290
	During Cane Syrup Based Production	850.8
<b>18 CPU Capacity</b>		
a	Capacity of CPU	CPU capacity : 1300 m <sup>3</sup> /day
<b>19 Details of Hazardous Wastes</b>		

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Sr. No.	Particulars	Category *	UOM	Quantity	Method of Disposal/Management
a	Used/Spent Oil	5.1	KL/A	0.1	Disposal through MPCB authorised recycler
*Schedule I of The Hazardous and Other Wastes (Management and Trans boundary Movement) Rules, 2016.					
20	<b>Details of Non-Hazardous Solid Wastes</b>				
Sr. No.	Particulars	Category	UOM	Quantity	Method of Disposal/Management
a	Boiler Ash	-	TPD	4.24	Sell to brick manufacturing unit
b	Yeast Sludge	-	TPD	28.04 (Max)	Sold/ Use as manure
c	CPU Sludge	-	TPD	18.90 (Max)	
d	Spent wash powder	-	TPD	63 (Max)	

#### 4.0 Description of the Environment

Primary baseline environmental monitoring studies in 10-km radius study area were conducted through NABL approved laboratory – **Shreeji Aqua Laboratories** during December 2021 - February 2022.

##### 4.1 Topography, Land use & its Classification

The physical setting of study area shows an irregular pattern. Regionally, there is relatively good variation with respect to relief features. The area shows a variation of approximately 50m-70m from North East to South West and approximately 60-80 m from North West to South East. The Elevation from 235 m to 418 m MSL are observed in the study area.

The main river in the study area is the Godavari River. Presence of Naigaon Nala was observed towards the South West of Godavari River. The region also shows the presence of Jod Nadi which is relatively drier in nature. The water resource in the region is not that rich in the 10 km radius study area. Majority of water distribution originates from the Godavari River, due to which farming is done well in the surrounding area. Hence the area is dominated by agricultural activities close to water source and the remaining regions are dominated by Wastelands. Dendritic to sub dendritic type of pattern is present in study area. The area as a whole represents a relatively undulated region.

##### 4.2 Soil Environment

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The soil samples were derived from 8 different locations within the study area of the project. Analysis results of the same, revealed that the pH values of soil samples were varying in range of 7.20 to 7.50; which indicated Neutral to slightly alkaline nature of soil samples. The organic matter content in soils was varying between the range from 1.29-3.56 percent. The values for Nitrogen at all locations varied between 794.1 to 1390.6 kg/ha. & maximum concentration of Nitrogen was observed at location S1. Concentration of Phosphate were found to be in the range of 182.5 to 328.5 kg/ha. whereas highest concentration was observed at location S6, while the lowest concentration was observed at location S2. Concentration of potassium amongst all locations was found to be ranging between 223.7 to 381 kg/ha. Heavy metals viz.As, Cr, Hg & Pb were below detection limit.

### 4.3 Air Environment

Ambient Air quality for criteria pollutants viz. PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>x</sub>, SO<sub>2</sub> and CO was monitored at eight (8) locations in study area whereas additional parameters viz. NH<sub>3</sub>, C<sub>6</sub>H<sub>6</sub>, BaP, O<sub>3</sub>, Pb and Ni, along with criteria pollutants were monitored at proposed project location.

- **Particulate Matter (PM<sub>2.5</sub>)**

The maximum of PM<sub>2.5</sub> (31.5 µg/m<sup>3</sup>) during the study period was recorded at location A8, whereas the minimum value (30.1 µg/m<sup>3</sup>) concentration was recorded at A4 & A5 location . The average concentration of PM<sub>2.5</sub> during the study period was computed to be in the range of 27.53-29.73 µg/m<sup>3</sup>.

- **Particulate Matter (PM<sub>10</sub>)**

The highest 24-hourly concentration was recorded at sampling location A3. At the same time minimum concentration was observed at location A7. The average concentration of PM<sub>10</sub> can be said to be ranged between 49.67-52.89 µg/m<sup>3</sup>.

- **Sulphur Dioxide (SO<sub>2</sub>)**

The ambient air monitoring results indicate that the highest concentration of SO<sub>x</sub> is experienced at A1. The presence of narsi- umri road and fuel burning within village are the principle source of emission for SO<sub>x</sub>. The average concentration of SO<sub>x</sub> recorded during the study period ranged between 13.6-17.01 µg/m<sup>3</sup> respectively.

- **Oxides of Nitrogen (NO<sub>x</sub>)**

The highest value of NO<sub>x</sub> during the monitoring period was observed at location A1 while the minimum average was recorded at A6. The average concentrations were in the range of 18.65-20.28 µg/m<sup>3</sup>. The maximum 24 hourly value of NO<sub>x</sub> was recorded at the monitoring location A1 (22.5 µg/m<sup>3</sup>) whereas the minimum concentration of NO<sub>x</sub> was recorded at location A7 (21.5 µg/m<sup>3</sup>).

- **Carbon Monoxide (CO)**

The anthropogenic source of CO is due to incomplete combustion of fuel majorly in absence of air. The maximum concentration of CO estimated at all locations during the study period can be observed is 0.09 mg/m<sup>3</sup>.

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All the parameters were found to be within the desired limits specified by NAAQ Standard.

#### **4.4 Noise Environment**

Ambient noise levels were monitored at eight (8) locations in the study area during the study period.

##### **Industrial Zone**

The day time noise level at the project premises was observed to be 52.84 dB (A) while during night time the noise level was recorded to be 43.02 dB (A). It shall be noted that the noise levels during the day time as well as night time were estimated to be under the prescribed standards by CPCB.

##### **Residential Zone**

The minimum noise level recorded during the daytime was observed at location N8, whereas the maximum noise levels can be observed at location N2. The location N7 is well populated in the surroundings. It shall be noted that the permissible limits for noise did not exceed at any of the locations selected for sampling.

#### **4.5 Ground Water Environment**

The above results revealed that values/ concentrations of various parameters amongst all the samples were in the range of pH – 7.30 to 7.50, TDS – 412.6 to 472.6 mg/l, Sulphates – 62.3 to 84.9 mg/l, Phosphates – 1.84 to 2.18 mg/l, Total Hardness – 168.9 to 191.9 mg/l, Nitrate – 14.3 to 21.6 mg/l, Bicarbonate – 22.4 to 33.9 mg/l, Calcium – 41.66 to 51.4 mg/l, Sodium – 48.9 to 61.9 mg/l, Potassium 24.6 to 37.9 mg/l, Magnesium – 15.6 to 18.4 mg/l, COD - <5.0 mg/l, BOD - <1.0 mg/l, whereas concentrations of Arsenic, Lead were <0.01 mg/l and that of Cadmium, Iron, Chromium, Mercury, Nickel & Zinc were below detection limit. Total Coliforms & E. Coli were absent in all samples.

Observations during ground water sampling revealed that any of the sampled ground water sources were not subjected to releases, domestic activities like bathing, cattle washing etc. However as evidenced during sampling & field visits the study area was subjected to tremendous agricultural runoff which may be attributed to found concentrations of Nitrogen, Sulphates & Phosphates in ground water samples.

Further to assess the prevailing quality of ground water in study area, the analysis results are compared with the IS 10500 : 2012 viz. Drinking Water Standards by Bureau of Indian Standards which revealed that parameters viz. pH, Chlorides, Sulphates, Total Hardness, Nitrate, Arsenic, Calcium, Cadmium, Iron, Lead, Chromium, Mercury, Nickel, Zinc, Fluorides, Total Coliforms and E. Coli were within acceptable concentrations whereas TDS & Magnesium were within permissible concentrations, However though the concentrations of COD, BOD, Sodium, Potassium & Phosphates being not specified in standards based on the specified standards it is can

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be interpreted that prevailing ground water in study area is fit for human consumption use, thus it can be concluded that the prevailing ground water in study area is by & large not polluted.

#### **4.6 Surface Water Environment**

Surface water samples were derived from 4 locations in different surface water bodies within study area, analysis results of the same revealed that pH values amongst all samples varied in the range of 7.20 to 7.50, Total Hardness concentration varied in the range of 124.6 mg/l to 164.8 mg/l & maximum concentration was recorded at SW6, TDS concentration varied in the range of 312.9 to 398.7 mg/l whereas maximum concentration 398.7 mg/l was recorded at SW6 & minimum concentration 312.9 mg/l at SW3. Electrical Conductivity was found to be ranging in between 482.6 to 613.9  $\mu$ S/cm. The concentrations of Dissolved Oxygen, BOD & COD were found to be varying in the range of 3.4 to 3.9 mg/l, 3.0 to 5.0 mg/l & 10 to 17.3 mg/l respectively whereas the concentrations of Phosphates, Nitrate & Ammonical Nitrogen varied in the range of 3.21 to 4.12 mg/l, 11.6 to 24.6 mg/l & 0.01 to 0.28 mg/l respectively.

Concentrations of elements such as Calcium, Sodium & Potassium were found to be in the range of 32.4 to 42.9 mg/l, 38.9 to 49.8 mg/l & 9.84 to 15.9 mg/l respectively.

To ascertain the best suited use of sampled surface water bodies, the analysis results were compared with the Designated Best Use Water Quality Criteria & the analysis revealed that sampled surface water bodies in study area be suited for Class “E” Water i.e., Irrigation, Industrial Cooling, Controlled waste disposal.

#### **4.7 Biotic Environment**

##### ***Project site flora & fauna:***

Project site and surrounding area of site comes under dry deciduous and southern thorn forest types (Chmapion and Seth 1968). Mixed forest consisting of various varieties of species the occurrence of which is considerably influenced by biotic interferences and management. Major tree species occurring in the forest can be listed as Teak, Anjan, Arjun, Bel, Babul, Khair etc. Growth of plants quite stunted because of poor soil quality but growth of grasses is abundant in all areas. Major land is covered with scrub forest which is uneconomic and thorny species.

Biological environment of the area was studied during the study period. No endangered species have been sighted in the area. No Wildlife Sanctuary, National Park, Biosphere Reserves, Wildlife Corridors exists within study area of 10 km radius.

***Species of concern category*** - None

***Schedule I Species*** - None



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### Study area flora & fauna:

#### Flora:

#### Proposed project site:

The dominant species in this area are khair, babhul, bor, palas, hiver, Acacia catechu, Zizipus jujuba etc. etc.

#### Fauna:

Faunal diversity studied during field visit and categorised as per the respective groups and occurrence as well. Photographic evidence of same provided as per the requirement of project. Godavari river is closer to proposed project site (Within 10 Km radius) and good diversity of bird's species has been observed. Few water bodies also present within 10 km radius and harbours a great diversity. Detailed faunal investigation with checklist and photographs enlisted below,

Based on field survey, total 140 plants species have been recorded, out of which 52 Tree species, 20 Shrubs species and 55 Herbs and 9 Climber species are identified in entire study area. Total 12 species of odonates of which 9 were dragonflies and 3 were tiny damselflies, 7 species of bugs and 7 species of beetles have been reported during entire field visit from different habitats on project site. 22 species of butterflies found during the field survey which shows greater diversity of butterflies. 82 bird species were recorded in the study area, most of them around the water bodies and grassland. Mammals observed during field survey were 7 species which are mostly common, no threatened taxa have been reported from proposed project site.

#### 4.8 Socio-Economic Environment

The 10 km study area includes seven Taluka of Nanded District. There are total 74 villages in the study area. The study area is essentially urban in nature. The socio economics of study area is studied through primary and secondary survey. The socio-economic aspects of the study area are summarized in the table given below.

**Table 2: Summary of Socio-Economic Aspects**

Demographic Parameters	Details
No. of States	1
No. of District	1
No. of Tehsil	7
No. of Villages	74
Total Area of surveyed village (ha)	47097.08
Total No. of Households	24410
Total Population	47964
Child Population	6619
Scheduled Castes	9123

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Scheduled Tribes	4545
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*Source: Primary Census Abstract & DCHB 2011, Nanded District, State Maharashtra*

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## 5.0 Anticipated Environmental Impacts and Mitigation Measures

**Table 3: Summary of Impacts & Mitigations**

Sr. No	Environmental Parameters	Aspect Attributes	Anticipated Impacts	Proposed Mitigation Measures
<b>Construction Phase</b>				
1.	Air Quality	Dust during handling of cement/concrete/stone aggregates & other construction materials.	<p>The estimated dust generation would be around 6.903 tons/month due to proposed construction activity.</p> <p>Exposure of construction workers to such dusts may lead to short term respiratory problems, whereas, prolonged &amp; continuous exposure may lead to malfunctioning of lungs.</p> <p>The anticipated construction period will be 8 months after grant of all Environmental Clearance, Consent To Establish &amp; all other Statutory Permissions.</p>	<p>Proper loading and unloading of the materials to ensure minimum dust. Managing &amp; covering the stockpiles. Regular sprinkling of water on the working site,</p> <p>Installing wind barriers around working site &amp; all around the plot boundary for containing the dust.</p>
2.	Noise Levels	Noise generated from construction machineries like Poclain, Lift Crane, Jack Hammer Drill, Digger, Compactor, Roller etc. & by use of construction equipments like Jack Hammer, Cutter, Drill Concrete	It is anticipated that the cumulative noise levels by all construction machineries, equipments & activities at propagating at plant boundary will be in the range of 14.78 dBA to 22.90 dBA & propagating intensity of noise at	PPEs viz. Ear Plugs/Muffs will be provided to workers, Construction activities will be limited from 9.00 AM to 5.00 PM, Installation of noise barriers around project plot will further minimize the intensity of propagating noise.

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		vibrator etc. and by arrival & depart of transport vehicles.	distance of 100 m from plot will be 22.02 dBA, thus significant impacts outside plant premises are not anticipated.	
3.	Water Quality	Surface runoff water used for construction activities mainly for concrete mixing, sprinkling etc. Sanitation waste water by construction workers.	If such runoff water & sanitation waste water finds way to surrounding soils & water body, may lead to contamination of surrounding soils & increased turbidity & contamination in water body.	The surface runoff water generated during construction activities will be properly filtered and utilised for gardening or sprinkling & Mobile sanitation facilities will be provided to workers which will be periodically cleaned through night soil tankers.
4.	Construction & Demolition Wastes Management	Proposed project being a green field project, demolition waste will not occur however inert construction wastes such as: Cardboards, Wooden Boxes, Wooden planks, Metal rods, HDPE bags, Felled Concrete, Stones, Aggregates & debris will be anticipated to be generated.  Excavated/Dug soil/earth will be generated during site preparation activities.	Haphazard handling of such wastes may lead to advent of Rodents, Reptiles within project plot, thereby causing dangers to workers working on site.  Disposal of such wastes on land will lead to degradation of soils.	Excavated/ dug soil/earth will be stored appropriately in dedicated space within project plot & will be used for green belt development activity along with mix of new soil.  Inert construction wastes viz. Cardboards, Wooden Boxes, Wooden planks, Metal rods, HDPE bags will be stored in dedicated space & sold to recyclers.

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				Felled Concrete, Stones, Aggregates & debris will be used as filling material for internal roads in consonance with Construction & Demolition Wastes Management Rules 2016.
<b>Operational Phase</b>				
1.	Air Quality	<p>Utilities stack emissions viz. Particulate Matter, SO<sub>2</sub>, NO<sub>x</sub> &amp; CO from boiler &amp; D.G operations &amp; Process emissions viz. CO<sub>2</sub> &amp; VOC's.</p> <p>VOC emission generation due to the handling and storage of the Ethanol.</p> <p>Emissions from material transport vehicles.</p>	<p>The anticipated maximum concentration of PM<sub>10</sub> &amp; PM<sub>2.5</sub> from steam boiler operations will be 0.09 &amp; 0.06 µg/m<sup>3</sup>, maximum concentration of SO<sub>2</sub> will be 1.21 &amp; that of NO<sub>x</sub> will be 2.96 g/m<sup>3</sup> which are likely to be carried in downwind direction.</p> <p>Anticipated health effects: People in downwind localities if prone to continuous &amp; prolonged emissions may be susceptible to adverse health impacts related to respiratory &amp; pulmonary due to particulate matter. Carbon monoxide decreases the oxygen carrying capacity of the blood by reducing the haemoglobin.</p> <p>The anticipated process generations are CO<sub>2</sub>- 70 TPD,</p>	<p>1. ESP will be attached to stack of 40 m height based on CPCB calculations.</p> <p>2. D.G will be provided with a stack of 2.6 m above roof as per CPCB guidelines for proper dispersion of emissions.</p> <p>3. CO<sub>2</sub> Bottling plant is proposed for recovery of process emission.</p> <p>4. Provision of closed feeding system for solvents.</p> <p>5. The roads within the premises will be paved to avoid the dust generation from vehicular activity.</p>

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			<p>Which will be sent to CO2 recovery plant.</p> <p>The health effects related to VOC's are eye, nose and throat irritation, headaches.</p> <p>Environmental effects:</p> <p>The air emissions in long course of time may affect the immediate surrounding vegetation stature physically (leaf senescence, hampered growth etc.) &amp; biologically thus may affect the overall surrounding ecology.</p>	<p>6. It will be ensured that all the transportation vehicles have a valid PUC (Pollution under Control) Certificate.</p> <p>7. Regular sweeping of all the roads &amp; floors will be done to avoid fugitive dust.</p> <p>8. The proposed thick green belt of 10 m width along the plant periphery will help to capture the fugitive emissions.</p> <p>9. Industry to ensure that at no point of time the air emission concentrations exceed the prescribed CPCB/Consented standards.</p>
2.	Noise Quality	Operation of Steam Boilers, Cooling Towers, Pumps, Blowers & material transport vehicles.	<p>It is anticipated that the cumulative noise levels by all machineries, equipments &amp; operation activities at propagating at plant boundary will be in the range of 1.58 dBA to 4.88 dBA.</p> <p>Impacts of exposure to continuous &amp; prolonged noise would be</p>	<p>1. Acoustic enclosures will be provided to high noise generating equipments for attenuation of noise level during operation.</p> <p>2. Steam boilers will be placed in a confined space viz. boiler house where the surrounding walls will</p>

			<p>Temporary/Permanent hearing loss, Mental disturbances Increase in heart rate Reduced workers performance due to psychiatric disorder and Tinnitus in case of high level of noise exposure on regular basis.</p> <p>The intensity of propagating noise at a distance of 100 m from plot boundary will be 4.88 dBA, thus significant impacts outside plant premises are not anticipated.</p>	<p>acts as a barrier for propagating noise.</p> <p>3. PPE's viz. Ear muffs/plugs will be provided to workers working near noise generating equipments.</p> <p>4. The proposed thick green belt of 10-20 m width along the plant periphery will help to further minimise the intensity of propagating noise out of plant premises.</p>
3.	Water Quality	<p>1. Effluent from process, washings, Backwashes. 2. Boiler &amp; Cooling Tower blow-downs. 3. Domestic wastewater.</p>	<p>The anticipated treated effluent characteristics are: pH - 7.5 to 8.0, TSS &lt; 100 mg/lit., BOD &lt; 100 mg/lit., COD &lt; 250 mg/lit., TDS &lt; 2100 mg/lit. and Oil &amp; Grease &lt; 10 mg/lit.</p> <p>Accidental/Deliberate release of treated/un-treated effluents in surface water bodies may lead to contamination/ eutrophication/ acidification/ toxification of the subjected water bodies and in of case land may lead to complete</p>	<p>For efficient treatment of the spent wash separated using analyser column, MEE followed by Spent wash dryer will be installed; The condensate from MEE unit will be collected and it will be further treated in CPU of 1300 KL Capacity along with other effluent streams like Spent Lees, Blowdowns from Boiler and Cooling Towers, Sealing water, WTP reject and Washing effluent.</p>

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			<p>degradation of subjected land affecting, also may contaminate the ground water by way of percolation.</p> <p>Such affected soils, Surface water &amp; ground water sources cannot be used for any purpose &amp; depending terrestrial &amp; aquatic ecology will be completely affected.</p>	<p>The CPU will be consist of Primary, Secondary and Tertiary facility.</p> <p>Domestic effluent load will be connected and treated in secondary treatment facility of CPU.</p>
4.	Solid Waste Management - Hazardous	<ol style="list-style-type: none"> <li>1. Hazardous waste i.e. Spent oil generated from DG and maintenance of the plant.</li> <li>2. Hazardous waste generated from maintenance operations.</li> </ol>	<p>Unscientific handling &amp; disposal may lead to contamination of surrounding soils, water sources &amp; there by affecting the ecology &amp; health of the workers coming in direct contact with the hazardous waste like skin allergies/rashes/burns etc.</p>	<ol style="list-style-type: none"> <li>1. Spent oil generated from project activities will be handled, stored and disposed as per Hazardous Waste Management Rule, 2016 and its amendments till date.</li> </ol> <p>Mainly it will be sold to MPCB authorised vendor.</p>
5	Solid Waste Management (Non Hazardous Inert Waste)	<ol style="list-style-type: none"> <li>1. Scrap Metal</li> <li>2. Scrap Plastic</li> <li>3. Office Waste</li> <li>4. Canteen Waste</li> <li>5. Wooden Pallets</li> <li>6. Boiler Ash</li> <li>7. CPU Sludge</li> <li>8. Dry Spent wash powder</li> </ol>	<p>Hap-hazard handling &amp; storage may lead to inadequate open space in plant premises &amp; it may lead to rodent breeding thereby affecting the occupational health &amp; environment.</p>	<ol style="list-style-type: none"> <li>1. Designated area for Scrap materials (Metal, Plastic, Wooden Pallets, Office Waste) storage will be provided in the plant.</li> <li>2. Scrap materials will be recycled through scrap vendors.</li> </ol>



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		9. Yeast Sludge		<p>3. Daily housekeeping waste and canteen waste will be disposed through vermin composting facility (off-site).</p> <p>4. Boiler ash – 4.24 TPD will be used in brick manufacturing unit</p> <p>5. CPU Sludge- 18.90 TPD, Yeast Sludge – 28.04 TPD &amp; Spent wash powder- 63 TPD will be mixed together and will be sold as Manuare</p>
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## 6.0 Quantitative Risk Assessment and Mitigation Measures

Quantitative Risk for proposed project have been assessed based on ALOHA for tank storages.

Based on the unsafe distances plotted in ALOHA software output, the MCLS (Maximum Credible Loss Scenario) for proposed factory is identified for Ethanol & the anticipated effect distance is 82 from Ethanol PESO area in factory premises.

The scenario considered for assessing the impact by quantitative risk assessment was taken from Thermal radiation from pool fire

## 7.0 Disaster Management Plan

Disaster Management Plan will be implemented in consultation with the District Administration to take care of health and safety during any untoward incident.

In view of handling of processes in industry, On-site Emergency Plans are important and hence has been prepared for the industry. Additionally recommendations for and Off-site shall be provided to the District Administration. During operational phase, surrounding population shall be made aware of safety precautions to be taken in case of any emergency situation due to the overall project activity.

## 8.0 Occupational Safety & Health Management

The Project Proponent shall continue to strictly adhere to the rules of Factories Act 1948 & the Maharashtra Factories Rules, 1963 regarding the occupational health facilities to be provided to the workers of the company.

- Industry will provided decontamination facilities for the workers. The health records of the workers will be maintained.
- For the continuous and continual development, company will continue to train & educate the operators and workers with the environment, health & safety rules & regulation, procedure and measures.
- Periodic medical check-ups will be carried out to ensure the health status of the all workers.
- Job rotation will be done.

## 9.0 Post Project Environmental Monitoring Plan

Post project environmental status will be evaluated as per the Environmental Monitoring Plan framed in EIA along with additional parameters suggested if any Statutory Clearances/Permissions and frequency of environmental attributes including monitoring locations will be as per the guidelines provided by MoEF&CC/CPCB/MPCB. Monitoring shall be carried out by third party laboratories that are accredited by NABL and/or MoEF&CC.

## 10.0 Environmental Management Plan

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Conduction of Environmental monitoring program as per plan, periodic reviews & audits will be carried out for effective environmental management. Project Management along with EHS department will ensure overall effective implementation of the management plan.

Systems will be in place to ensure compliance of all environmental statutory requirements & obligations and it will be ensured.

All recommendations given in the EIA report including that of occupational health, risk mitigation and safety shall be complied. Company have allocated Indian Rs. 2296.5 Lakh for environmental pollution control measures & environment management plan activities; which is ~20.78 % of total project cost.

### **11.0 Project Benefits**

The following benefits are expected from the proposed project:

- This project will have locale specific positive social and economic benefits.
- Some of these would be direct benefits of long term nature.
- The project will generate revenue for the State Government.
- The project will create additional direct/indirect employment at various downstream & upstream ends and largely for local people.
- Local people will be preferred for employment during the construction and operation stage.

### **12.0 Corporate Environment Responsibility (CER) Action Plan**

Ideally CER planning is envisioned from the perspective of need based assistance in health, education, sustainable lifestyles, social mobilization, infrastructure, water harvesting, agriculture and environmental protection taking into consideration locale specific scenarios around the project area.

Company will carry out its duties under Corporate Environment Responsibility (CER) as per the MoEF&CC Office Memorandum - F.No.22-65/2017-IA.III dtd. 30th September 2020, by virtue of which the CER activities will be implemented as part of Environment Management Plan.

CER cost of 2% of proposed project cost viz. 1.657 Cr is allocated for implementation of need based CER activities in project area.

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