

Executive summary

of Draft EIA report

Proposed Expansion of Grain Based Distillery from 60 KLPD to 250 KLPD and Captive Co-generation from 2 MW to 6.5 MW.

At village Kadwa Mhalungi & Village Pade, Taluka Dindori, Dist. Nashik, Maharashtra.

By

M/s. Pernod Ricard India (P) Ltd.

Environmental Consultant and Laboratory



MITCON Consultancy & Engineering Services Ltd.

Environment Management and Engineering Division
Behind DIC Office, Agri College Campus, Shivajinagar,
Pune 411 005, Maharashtra (INDIA),

Tel.: +91- 020-66289400

QCI-NABET, Lab NABL, MOEF & CC, OHSAS 18001:2007 approved

Consultant



Business Brains

Kolhapur Office: Royal Prestige, E-5, 1127, E, Sykes Extension, Kolhapur India.

Pune Office: 202, Regent Plaza, S. No. 5, Baner Pashan Link Road, Baner, Pune India.

Contact: +91 (0) 9823139883, +91 (0) 231+2529813

CONTENTS

| | |
|---|----|
| Executive Summary | 2 |
| 1 Introduction | 2 |
| 2 Project Location | 2 |
| 3 Salient features of the project | 3 |
| 4 Process description | 6 |
| 5 Description of the Environment..... | 7 |
| 6 Anticipated Environmental Impacts | 9 |
| 7 Environmental Monitoring Program..... | 9 |
| 8 Additional Studies | 11 |
| 9 Environmental Management Plan | 11 |
| 10 Environment Management Cost..... | 13 |
| 11 Project Benefits..... | 14 |
| 12 Conclusion..... | 14 |

Executive Summary

1 Introduction

M/s. Pernod Ricard India Private Limited (PRIPL) is proposing an expansion of their current Grain-Based Distillery, increasing its capacity from 60 KLPD to 250 KLPD along with expansion of captive co-generation from 2 MW to 6.5 MW. This expansion is planned within the existing distillery premises and will adhere to the Zero Liquid Discharge (ZLD) principle. The total land available for proposed expansion is 28.23 ha. Products will be GNS/ENA/FMS, IS/RS (5%), Lending and Bottling of Indian Made foreign, Maturation house (Storage in wooden cask), DDGS, DWGS, Fusel oil and Cogeneration. Raw Stillage generated will be treated through decantation followed by multi effect evaporator followed by Distillers' Wet Grain with Soluble (DWGS) dryer and the entire raw stillage will be converted to Distillers' Dry Grain with Soluble (DDGS) to achieve zero discharge (ZLD).

2 Project Location

The proposed project will be located at Gut No 110, 112, 126/1/A, 126/1/B, 126/1/D, 126/2/A, 126/2/B, 126/2/C, 127/1 to 127/5, 208/1, 208/2 & 365 at village Kadwa Mhalungi & Village Pade, Tal. Dindori, Dist. Nashik, Maharashtra is geographically located at Latitude 20°14'26.80"N & Longitude 73°48'40.21"E situated around 686 m above MSL.

3 Salient features of the project

Table 1 Brief information of the project and environmental setting

| #. | Particulate | Description | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------|--------------------|--|------------|----------|----------|-------|------------------------|-----|-----|-----|------------------|-----|-------|-------|-----------------|---|-----|------|--|--------|---|--------|---|-------|---|-------|-----------|-----|----|----|-------------------|-----|-----|-----|
| 1. | Proponent | M/s. Pernod Ricard India Private Limited | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. | Project | Proposed Expansion of Grain Based Distillery from 60 KLPD to 250 KLPD along with captive co-generation from 2MW to 6.5MW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. | Location | Gut No 110, 112, 126/1/A, 126/1/B, 126/1/D, 126/2/A, 126/2/B, 126/2/C, 127/1 to 127/5, 208/1, 208/2 & 365 at village Kadwa Mhalungi & Village Pade, Tal. Dindori, Dist. Nashik, Maharashtra. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. | Toposheet | 46H/11, 46H/12, 46H/15 & 46H/16 of Survey of India | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. | Product | <table border="1"> <thead> <tr> <th>Particular</th> <th>Existing</th> <th>Proposed</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Grain based Distillery</td> <td>60</td> <td>190</td> <td>250</td> </tr> <tr> <td>GNS/ENA/FMS KLPD</td> <td>57</td> <td>180.5</td> <td>237.5</td> </tr> <tr> <td>IS/RS (5%) KLPD</td> <td>3</td> <td>9.5</td> <td>12.5</td> </tr> <tr> <td>Lending and Bottling of Indian Made foreign (KL/A)</td> <td>162000</td> <td>-</td> <td>162000</td> </tr> <tr> <td>Maturation house (Storage in wooden cask) (As per CTO) (No.) (KL/A)</td> <td>16000</td> <td>-</td> <td>16000</td> </tr> <tr> <td>Fusel Oil</td> <td>6.0</td> <td>19</td> <td>25</td> </tr> <tr> <td>Cogeneration (MW)</td> <td>2.0</td> <td>4.5</td> <td>6.5</td> </tr> </tbody> </table> | Particular | Existing | Proposed | Total | Grain based Distillery | 60 | 190 | 250 | GNS/ENA/FMS KLPD | 57 | 180.5 | 237.5 | IS/RS (5%) KLPD | 3 | 9.5 | 12.5 | Lending and Bottling of Indian Made foreign (KL/A) | 162000 | - | 162000 | Maturation house (Storage in wooden cask) (As per CTO) (No.) (KL/A) | 16000 | - | 16000 | Fusel Oil | 6.0 | 19 | 25 | Cogeneration (MW) | 2.0 | 4.5 | 6.5 |
| | | Particular | Existing | Proposed | Total | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Grain based Distillery | 60 | 190 | 250 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | GNS/ENA/FMS KLPD | 57 | 180.5 | 237.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | IS/RS (5%) KLPD | 3 | 9.5 | 12.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Lending and Bottling of Indian Made foreign (KL/A) | 162000 | - | 162000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Maturation house (Storage in wooden cask) (As per CTO) (No.) (KL/A) | 16000 | - | 16000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Fusel Oil | 6.0 | 19 | 25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cogeneration (MW) | 2.0 | 4.5 | 6.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. | By-product | <table border="1"> <thead> <tr> <th>Particular</th> <th>Existing</th> <th>Proposed</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>DDGS or</td> <td>65</td> <td>110</td> <td>175</td> </tr> <tr> <td>DWGS</td> <td>175</td> <td>625</td> <td>800</td> </tr> <tr> <td>CO2</td> <td></td> <td>185</td> <td></td> </tr> </tbody> </table> | Particular | Existing | Proposed | Total | DDGS or | 65 | 110 | 175 | DWGS | 175 | 625 | 800 | CO2 | | 185 | | | | | | | | | | | | | | | | | |
| | | Particular | Existing | Proposed | Total | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | DDGS or | 65 | 110 | 175 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | DWGS | 175 | 625 | 800 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CO2 | | 185 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. | Basic Raw Material | <table border="1"> <thead> <tr> <th>Particular</th> <th>Existing</th> <th>Proposed</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Broken Rice</td> <td>127</td> <td>399</td> <td>526</td> </tr> <tr> <td>Maize</td> <td>150</td> <td>485</td> <td>635</td> </tr> <tr> <td>Malt</td> <td>6</td> <td>31</td> <td>37</td> </tr> </tbody> </table> | Particular | Existing | Proposed | Total | Broken Rice | 127 | 399 | 526 | Maize | 150 | 485 | 635 | Malt | 6 | 31 | 37 | | | | | | | | | | | | | | | | |
| | | Particular | Existing | Proposed | Total | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Broken Rice | 127 | 399 | 526 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Maize | 150 | 485 | 635 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Malt | 6 | 31 | 37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. | Operation days | 365 days | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. | Total Plot Area | 28.23 ha. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. | Green belt Area | Existing: 4.87 ha. Proposed: 4.53 ha. Total: 9.4 ha. (33.3% of total plot area) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11. | Water requirement | Existing: Total fresh water requirement: 917.6KLD Industrial: 237.1 KLD Bottling: 657 KLD Domestic: 23.5 KLD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | |
|-----|---------------------------|--|--|-----------------|-----------------|--------------|
| | | <p>Proposed:</p> <p>Total fresh water requirement: 873.15KLD Industrial: 798.9 KLD Bottling: 0 KLD Domestic: 74.25 KLD</p> <p>Total:</p> <p>Total fresh water requirement: 1790.75KLD Industrial: 1036 KLD Bottling: 657 KLD Domestic: 97.75 KLD</p> | | | | |
| 12. | Source of water | Palkhed Irrigation division (<i>Permission is received</i>) | | | | |
| 13. | Boiler | <p>Existing: 18 TPH with 2 MW TG Proposed: 60 TPH* with 6.5 MW TG * For entire 250 KLPD new 60 TPH boiler will be utilized. Existing 18 TPH boiler will be standby.</p> | | | | |
| 14. | Stack details | <p>Existing 18 TPH: 62.5 m with Electro Static Precipitator Proposed 60 TPH: 77 m with Electro Static Precipitator</p> | | | | |
| 15. | Steam | <p>Existing: 17.1 TPH Proposed: 52.5 TPH</p> | | | | |
| 16. | DG Set | <p>Existing: 500 kVA * 4 1010 kVA* 2</p> | <p>Proposed: 2000 kVA *3</p> | | | |
| 17. | Fuel for Boiler | <p>Existing: Husk/ Pellet: 180 TPD Coal:100 TPD HSD: 556 kg/Hr.</p> | <p>Total: Husk/ Pellet: 410.4 TPD Coal in case of emergency 15% Coal shall be used. HSD for DG: 950 kg/Hr.</p> | | | |
| 18. | Power | <p>Existing: Operation phase: 1.5 MW (<i>Own co-gen power plant</i>) Total: Construction phase: 500KW-800 KW (<i>State Electricity Board</i>) Operation phase: 6.25 MW (<i>Own co-gen power plant</i>)</p> | | | | |
| 19. | Man-power | During Operation | | Existing | Proposed | Total |
| | | Skilled | | 275 | 100 | 375 |
| | | Unskilled | | 1330 | 250 | 1580 |
| 20. | Project cost | 175.5 Cr | | | | |
| 21. | EMP capital cost | 21.31 Cr | | | | |
| 22. | CER Cost | 1.32 Cr (<i>Brownfield project: 0.75% of total project cost</i>) | | | | |
| 23. | Total effluent generation | <p>Existing: Total effluent generation: 836 CMD Raw stillage: 733 CMD (Decanter followed MEE followed by dryer)</p> | | | | |

| | | | |
|-----|------------------------------------|--|---|
| | | Condensate, Scrubber, Misc. and blow down: 545 CMD (550 CMD CPU) Bottling: 260 CMD (270 CMD ETP) Total sewage generation: 31 KLD (75 CMD STP) Proposed: Total effluent generation: 968.72 CMD Raw stillage: 565 CMD (Decanter followed MEE followed by dryer) Condensate, Misc., Scrubber and blow down: 926.42 CMD (1500 CMD CPU) Total sewage generation: 42.3 KLD (Existing 75 CMD STP) Total: Total effluent generation: 1804.8 KLD Raw stillage: 1298 CMD (Decanter followed MEE followed by dryer) Condensate, Misc., Scrubber and blow down: 1471.5 CMD (1500 CMD CPU) Bottling: 260 CMD (270 CMD ETP) Total sewage generation: 70.38 KLD (75 CMD Modular STP) | |
| 24. | Air Pollution control | Existing | Proposed |
| | | Boiler 18 TPH: ESP is provided with stack height of 62.5 m 500 kVA * 3: Stack of 30 m 500 kVA* 1: Stack 10 m 1010 KVA * 2.: Stack 30 m | Boiler 60 TPH: ESP is provided with stack height of 77 m 2000 kVA *3: Stack of 30 m each |
| 25. | CPU | Existing: 550 CMD Total: *1500 CMD (*Existing 550 CMD CPU will be replaced with new 1500 CMD CPU) | |
| 26. | ETP | Existing: 270 CMD Proposed: None Total: 270 CMD | |
| 27. | Solid & Hazardous Waste Generation | Existing: Spent oil (5.2): 109.6KL/Day (Sent to authorized recyclers) Coal ash: 25 TPD (ash generated will be sold to brick manufacturers)/ Husk & Pellet ash: 23.4 TPD (used as manure) CPU Sludge: 1.09 TPD (used as manure) STP Sludge: 7 TPD (used as manure) Total: Spent oil (5.2): 210KL/Day (Sent to authorized recyclers) Coal ash: 25 TPD (ash generated will be sold to brick manufacturers) Husk & Pellet ash: 53.4 TPD (used as manure/ sold to brick manufacturer) CPU Sludge: 4.2 TPD (used as manure) STP Sludge: 17.6 TPD (used as manure) | |

4 Process description

Distillery Process based on Grain

- Grain preparation
- Yeast propagation
- Fermentation
- Distillation

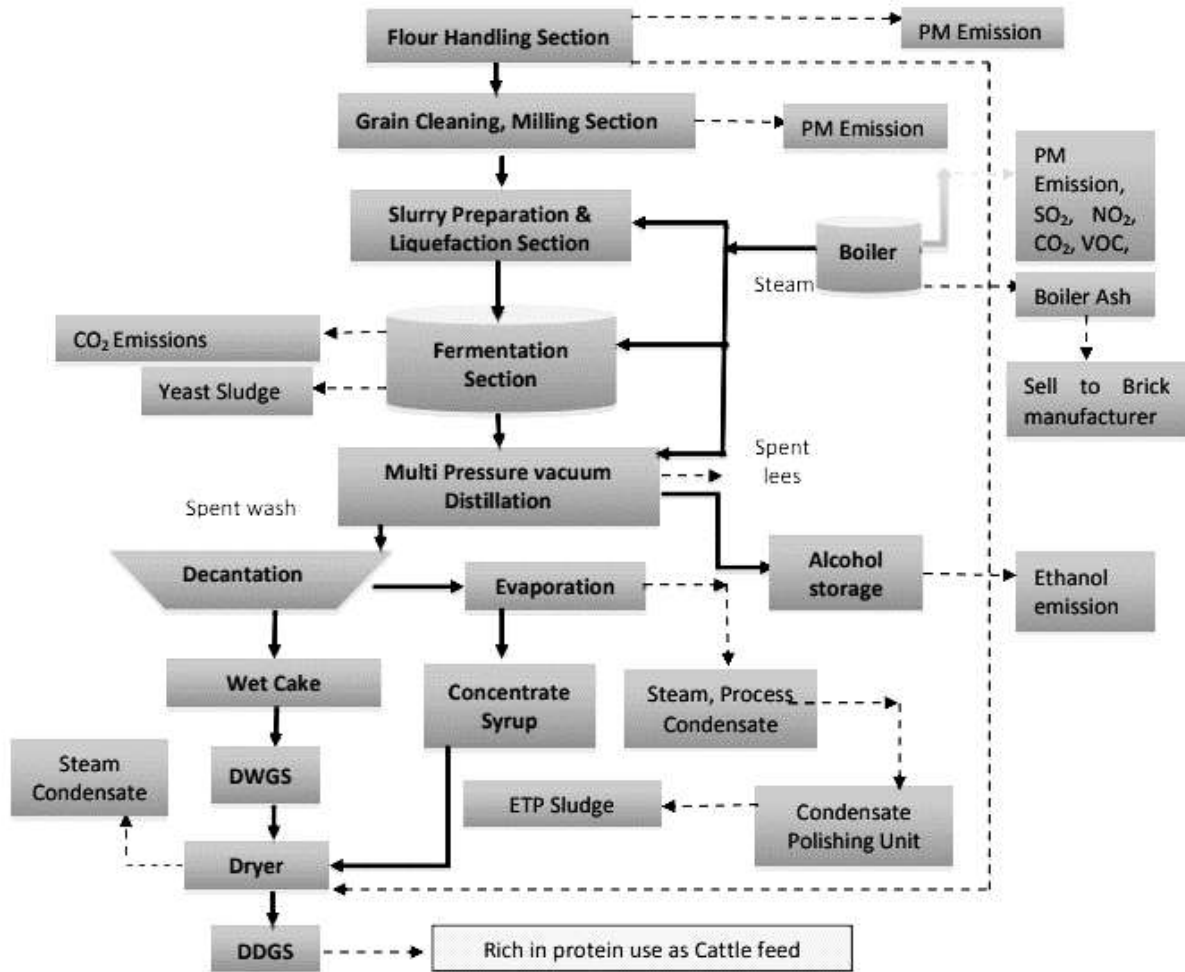


Figure 1 Distillery process flow chart (Grain based)

5 Description of the Environment

Standard ToR was approved by MOEF&CC, New Delhi on 01.03.2024 vide letter no. J-11011/171/2016-IA II(I). The study period conducted was from October 2023 to December 2023. The guiding factors for the present baseline study are the requirements prescribed by the guidelines given in the EIA Manual of the MoEF&CC and methodologies mentioned in Technical EIA Guidelines Manual for Distilleries by IL&FS Ecosmart Ltd., approved by MoEF&CC.

Table 2 Observation of Environmental monitoring

| Environmental Attributes | Frequency of monitoring | Parameters | Observed Results |
|-----------------------------------|--|---|---|
| Meteorology | Microprocessor based Weather Monitoring Station Continuous hourly recording | Wind direction | East to West |
| | | Max. Temp. | 43.9 °C |
| | | Mini. Temp. | 0.4 °C |
| | | Relative Humidity | 40-60 % |
| | | Precipitation | Annual avg. 678.4 mm |
| Ambient Air Quality | 12 Locations 24 hourly samples Twice a week for 3 months (in µg/m ³) | PM ₁₀ | All parameters are within limit of NAAQ 2009 PM₁₀ : 53.10 to 74.2 µg/m ³ PM_{2.5} : 18.94 to 29.6 µg/m ³ NO_x : 10.97 to 21.85 µg/m ³ SO₂ : 7.3 to 17.15 µg/m ³ |
| | | PM _{2.5} | |
| | | SO ₂ | |
| | | NO _x | |
| Water Quality (Ground & Surface*) | Once in season at 8 locations for GW and 6 locations for SW (Physical, chemical and biological parameters) | Parameter | Maximum the constituents are within the permissible limits prescribed standards promulgated by Indian Standards Ground Water: pH: 7.02 to 7.42 TDS: 314 mg/lit to 472 mg/lit Total Hardness: 162.52 mg/lit to 191.13 mg/lit Surface Water: pH: 7.15 to 7.53 DO: 5 mg/lit to 5.9 mg/lit BOD: 2 mg/lit to 14 mg/lit |
| | | pH | |
| | | TDS | |
| | | COD | |
| Soil Quality | Once in season at 10 locations | Soil type and texture, Physico-chemical properties, NPK | Electrical Conductivity value ranges from 652.8 µs/cm to 915.23µs/cm. |

| Environmental Attributes | Frequency of monitoring | Parameters | Observed Results |
|--------------------------|--|---|--|
| | | | Organic Carbon ranges from 0.22% to 0.52%. Phosphorous ranges from 11.58 kg/ha. to 17.4 kg/ha. And Potassium ranges from 145.53 kg/ha. to 204.89 kg/ha. Looking at the results, it can be said that the soil fertility of majority of soil samples have low to medium low fertility. |
| Noise Level | Once in season at 10 Locations (Noise levels in dB(A)) | Day | 46.9 – 62.1 |
| | | Night | 39.6 – 60.2 |
| Land use Pattern | One time visit of the study area | Identification & classification of land use | Most of the land is Agricultural land followed by Scrub land |
| Geology and hydrogeology | Based on secondary data | Geology and hydrogeology of the study area | Basaltic lava flows of the Deccan traps of Upper Cretaceous to Lower Eocene age. Major rivers in the district consists of Clay, Silt, Sand, Gravel, Kanker, etc. In Basalt, the individual flow thickness ranges between 20 to 30 m and has two distinct units. |
| Ecology | General in 10 km radial study area and data collected around the project site through field visits | Flora | During the study, total 91 tree species, 44 shrub species, 38 herbs, 15 climber species and 16 Grasses species were recorded. According to IUCN, Red list 2022 one species is Near Threatened (<i>Aegle marmelos</i>) and one species were Endangered (<i>Tectona grandis</i>). |
| Socioeconomic Data | General in 10 km radial study area and data collected around the project site through field visits | Socio-economic characteristics of the affected area | Sanitation facilities are satisfactory, Power supply facility is available in almost villages and town, Drinking water sources is mostly from |

| Environmental Attributes | Frequency of monitoring | Parameters | Observed Results |
|--------------------------|-------------------------|------------|--|
| | | | ground water. Medical facilities in terms of primary health centre and primary health sub centers in the rural areas are good. |

6 Anticipated Environmental Impacts

Table 3 Anticipated Impacts

| Environmental Facets | Anticipated Impacts |
|------------------------------|--|
| Air Environment | Probable increase in concentration of air pollutants due to process, fugitive and utility emissions. |
| Water Environment | Generation of industrial & domestic wastewater. |
| Land Environment | Impacts on land due to improper disposal of hazardous/ solid waste. |
| Ecological Environment | Positive as greenbelt of appropriate width will be developed and maintained by the company in the area. No impacts are envisaged on aquatic flora & fauna as there will be zero effluent discharge outside the plant premises. |
| Social Environment | Overall development of the area in respect of the infrastructure development, educational growth, health facilities etc. |
| Economic Environment | Positive impacts on economy of the region and the country as the Alcohol will be exported and revenue generation. |
| Noise Environment | Minor increase in noise level within the project area. |
| Occupational Health & Safety | Major health hazards are identified in worst case scenario. |

7 Environmental Monitoring Program

Table 4 Environmental monitoring schedule

| Particulate | Parameters | Number of location | Frequency |
|---------------------|---|--|-----------|
| Ambient air quality | PM ₁₀ , PM _{2.5} , SO ₂ , NO _x etc. | Ambient air quality at minimum 3 locations. Two samples downwind direction at 500 m and 1000 m respectively. One sample upwind direction at 500m. | Monthly |
| Stack emission | PM, SO ₂ and NO _x | All stacks | Monthly |
| | | Online stack monitoring will be installed | - |

| Particulate | Parameters | Number of location | Frequency |
|-----------------------------------|---|--|--------------------------------|
| Work place | PM _{2.5} , SO ₂ , NO _x , CO, O ₃ | Process emission in workplace area/plants (for each area/plant minimum 2 locations and 1 location outside plant area near vent) | Monthly |
| Waste water | pH, EC, SS, TDS, O&G, Ammonical Nitrogen, COD, BOD, Chloride, Sulphides etc. | Wastewater from all sources. Inlet & outlet of ETP, CPU and STP Online Monitoring machine is already installed at existing ETP. | Monthly |
| Surface water and ground water | pH, Salinity, Conductivity, TDS, Turbidity, DO, BOD, Phosphate, Nitrates, Sulphates, Chlorides, Total Coliforms (TC) & <i>E.Coli</i> | 3-5 location Within 1 km radius from spent wash tank and compost yard. 2 locations downward 1 location upward additional three locations within 10 km radius from the site. | Half yearly |
| Solid waste | Ash | <ul style="list-style-type: none"> • Process dust generated sludge and ash. • Before used as manure if used manure | Monthly |
| Soil Organic and Inorganic matter | N, P, K, moisture, EC, heavy metals etc. | At lands utilizing compost manure and treated effluent, 3 locations | Pre – monsoon and Post monsoon |
| Noise | Equivalent noise level - dB (A) at min. Noise Levels measurement at high noise generating places as well as sensitive receptors in the vicinity | 5 location At all source and outside the Plant area. | Monthly |
| Green belt | Number of plantation (units), number of survived plants/ trees, number of poor plant/ trees. | In and around the plant site | Monthly |
| Soil | Texture, pH, electrical conductivity, cation exchange capacity, alkali metals, Sodium Absorption Ratio (SAR), permeability, porosity. | 2-3 near Solid/ hazardous waste storage. At least five locations from Greenbelt and area where manure of biological waste is applied. | Quarterly |
| Occupational health | Health and fitness check-up of employees getting | All worker | Yearly/ twice a year |

| Particulate | Parameters | Number of location | Frequency |
|---|--|---|--------------------------------|
| | exposed to various hazards and all other staff | | |
| 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. | Mock drill records, on site emergency plan, evacuation plan | Monthly during operation phase |

8 Additional Studies

The following additional such as risk assessment for storage and handling of alcohol and mitigation measure due to fire and explosion and handling area has been carried out.

9 Environmental Management Plan

Following mitigation measures shall be adopted by factory to minimize the impact of project on the surrounding environment.

Table 5: EMP for various environmental attributes

| Environmental Attributes | Mitigation Measures |
|-------------------------------|--|
| Air Quality Management | <p>Process Emission</p> <ul style="list-style-type: none"> • CO₂ will be scrubbed in scrubber <p>Utility Emission</p> <ul style="list-style-type: none"> • All the D.G. sets shall be standby arrangement and will only be used during power failure. • Adequate stack height shall be provided to Boiler and D.G. sets. • Electrostatic Precipitator shall be provided as an air pollution control device to the boiler with approximately 99.99 % efficiency to capture maximum boiler fly ash. <p>Fugitive Emission</p> <ul style="list-style-type: none"> • The main raw material and product shall be brought in and dispatched by road in covered enclosures. • Dust suppression on haul roads shall be done at regular intervals. |
| Water & Wastewater Management | <ul style="list-style-type: none"> • The distillery would be based on 'Zero Liquid Discharge' technology. • Raw stillage will be treated through Decanter followed by Multi effect evaporator (MEE) followed Dryer to produce DDGS. • The Process condensate, spent lees will be cooled and will be treated in Condensate Polishing Unit, after treatment of which it will be recycled back to the process and CT. • Sewage will be treated in STP and the treated water will be used for gardening. |

| | |
|-------------------------------------|--|
| | <ul style="list-style-type: none"> • Proper storm water drainage will be provided during rainy season to avoid mixing of storm water with effluent. |
| Noise Management | <ul style="list-style-type: none"> • Closed room shall be provided for all the utilities so as to attenuate the noise pollution. • Acoustic enclosure shall be provided to D.G sets. • Free flow of traffic movement shall be maintained. Earmuffs shall be used while running equipment's of the plant. • Proper maintenance, oiling and greasing of machines at regular intervals shall be done to reduce generation of noise. • Greenbelt shall be developed around the periphery of the plant to reduce noise levels. |
| Odour Management | <ul style="list-style-type: none"> • Odour shall be primarily controlled at source by good operational practices, including physical and management control measures. • Better housekeeping will maintain good hygiene condition by regular steaming of all fermentation equipment. • Use of efficient biocides to control bacterial contamination. • Control of temperature during fermentation to avoid in-activation/ killing of yeast. • Avoid staling of fermented wash. |
| Solid & Hazardous Waste Management | <ul style="list-style-type: none"> • The hazardous waste i.e. spent oil generated shall be very minor and shall be sent to authorized recycler. • Boiler ash shall be sold to brick manufacturer. • ETP sludge and CPU sludge will be used as manure |
| Traffic Management | <ul style="list-style-type: none"> • Culverts shall be maintained. • The trucks carrying raw material & fuel shall be covered to reduce any fugitive dust generation. • Good traffic management system shall be developed and implemented for the incoming and outgoing vehicles so as to avoid congestion on the public road. |
| Green Belt Development / Plantation | <ul style="list-style-type: none"> • Plantation shall be done as per Central Pollution Control Board (CPCB) Norms. • The plantation in and around the plant site helps/will help to attenuate the pollution level. • Native species shall be given priority for Avenue plantation. |
| Corporate Social Responsibility | <ul style="list-style-type: none"> • An amount of INR 1.32 Cr. (As CER OM dated 1.05.2018 Greenfield project 0.75% of total project cost) will be allocated for CSR activities for weaker sections of the society . |
| Occupational Health & Safety | <ul style="list-style-type: none"> • Factory shall monitor the health of its worker before placement and periodically examine during the employment • Health effects of various activities and health hazard if any observed shall be recorded and discussed with the health experts for corrective and preventive actions need to be taken by the industry |

- All safety gear shall be provided to workers and care shall be taken by EMC that these are used properly by them. All safety norms shall be followed

10 Environment Management Cost

Table 6 Environment Management Cost

| S. No | Construction phase (with Break-up) | Capital Cost | O & M |
|--------|--|-------------------|-----------|
| | | (Amount in lakhs) | |
| 1 | Environmental monitoring | 0 | 3 |
| 2 | During site preparation | 5 | 0 |
| 3 | Noise and solid waste management | 5 | 0 |
| 4 | Water and waste water | 5 | 0 |
| 5 | Occupational health | 5 | 3 |
| 6 | Greenbelt development | 5 | 5 |
| | Total (A) | 25 | 11 |
| Sr. No | Operation Phase (with Break-up) | Capital Cost | O & M |
| | | (Amount in lakhs) | |
| 1 | Air pollution | 650 | |
| | Stack | 30 | 30 |
| b | ESP | 600 | |
| c | Online Continuous Emission Monitoring System (OCEMS) | 20 | |
| 2 | Water pollution | 1225 | |
| a | CPU | 350 | 20 |
| b | STP | 20 | |
| | Decanter | 105 | |
| | Dryer | 750 | |
| d | Noise pollution | 40 | 3 |
| 3 | Environmental Monitoring (Air, water, waste water, Soil, Solid waste, Noise) | 40 | 5 |
| 4 | Occupation health | 60 | 7 |
| 5 | Green belt | 56.6 | 10 |
| 6 | Solid waste | 15 | 5 |
| 7 | Rain water harvesting | 20 | 5 |
| 8 | Total (B) | 2106.6 | 85 |
| | Total A+B | 2131.6 | 96 |

11 Project Benefits

1. A grain-based distillery in India can contribute to local economic development by creating job opportunities in farming, production, and distribution sectors.
2. It enhances agricultural value chains by providing a stable market for grain producers in the region, promoting rural livelihoods.
3. With proper waste management practices, it can utilize by-products for animal feed, reducing environmental impact and supporting livestock industries.
4. Furthermore, they contribute to national GDP growth by generating revenue through exports of distilled spirits, showcasing India's rich tradition of craftsmanship in the global market.

12 Conclusion

- Zero liquid discharged is proposed with efficient mitigation measures implemented.
- Air emissions through stack will be controlled by ESP.
- Loss of vegetation and habitat will not be attributed.
- Personal protective equipment's, safety precautions, emergency plan & disaster management plan shall be in place to avoid the environment hazards.