## EXECUTIVE SUMMARY

### 1.1 Project Name, Location and Environmental Settings

M/s Balaji Overseas is proposing for the establishment of new unit for manufacturing of Chemicals at Village Hambran, Near Murti Agro Food, Hambran Road, Ludhiana, Punjab. Brief description about the nature, size and location of the project is given in **Table -1**

**Table-1 Project and Environmental Settings**

| S. No. | Particulars | Details |
|---|---|---|
| **1.** | **Nature and size of the Project** | Manufacturing of Formaldehyde (37%) 100TPD, Melamine Formaldehyde Resin 42.5TPD, Phenol Formaldehyde Resin 15.0TPD, Urea Formaldehyde Resin 42.5TPD at Village Hambran, Near Murti Agro Food, Hambran Road, Ludhiana, Punjab by M/s. Balaji Overseas. |
| **2.** | **Location details** | |
| | Village /Town/Plot No. | Hambran |
| | Tehsil | Ludhiana |
| | District | Ludhiana |
| | State | Punjab |
| | Latitude and Longitude | 30°54'50.72"N to 30°54'54.68"N<br>75°40'25.60"E to 75°40'28.33"E |
| | Toposheet No. | H43J9 |
| **3.** | **Area Details** | |
| | Total Project Area | 1.82 Acres |
| **4.** | **Environmental Setting Details (with approximate aerial distance and direction from the project site)** | |
| | Nearest major settlement | • Hambran is at a distance of 2 km (approx) in North direction.<br>• Bhattian is at a distance of 1.2 km (approx) in South direction |
| | Nearest City | • Ludhiana is at a distance of 17 km (approx) in East direction. |
| | Nearest Highway | • State Highway SH-20 is at a distance of 2.3 km.<br>• National Highway NH-1 is at distance of 19.5 Km in East.<br>• National Highway NH-71 is at distance of 19.2 Km in West |
| | Nearest Railway Station | • Ludhiana Railway station is at a distance of 16.5 km (approx) in East direction. |
| | Nearest Airport | • International Airport, Chandigarh is at a distance of |

| | | |
|---|---|---|
| | | 110km (approx) in SE direction. |
| | National Parks/ Wild Life Sanctuaries/ Biosphere Reserves/ RF and PF within 10km radius | • There is no National Park and Biosphere Reserve within 10 Km radius.<br>• No RF/PF within the 10 KM of the project site. |
| | Nearest Water Bodies | • Satluj River is at a distance of 7 km (approx) in North direction.<br>• Sirhind Canal is at a distance of 3 km (approx) in NE direction. |
| | Interstate Boundary | None |
| | Nearest Police Station | Hambran Police Station is at a distance of 2.7 km (approx). |
| | Nearest Post office | Hambran Post Office is at a distance of 2.3 km (approx). |
| | Nearest College | • Punjab Collage of Technical Education is at a distance of 10 km (approx). in SE direction |
| | Nearest School | Kendriya Vidyalaya, Baddowal Cantt Ludhiana is at a distance of 8.5 km (approx) in SE direction. |
| | Nearest Medical | Gupta Hospital, Ludhiana is at a distance of 12.9 km (approx) in East direction. |
| | Defence Installations | Nil |
| | Seismic Zone | Zone IV *Source-as per IS 1893 – 2002* |
| | **Cost Details** | |
| | Project Cost | Rs. 4.00 Crores |
| | Cost for Environmental Protection Measures | Rs.9.00 Lakhs |
| | Recurring Cost/Annum of EMP | Rs. 4.8 Lakhs |
| | Cost of ESC | Rs. 8.00 Lakhs |
| | Cost of OH&S | Rs. 1.5 Lakhs |

**1.2 Products and capacities**

M/s Balaji Overseas is proposing for establishment of chemical unit at Village Hambran, Near Murti Agro Food, Hambran Road, Ludhiana, Punjab. The estimated project cost is about **Rs 4.00 Crores**.

The proposed quantities for the manufacturing of products are given in table 2

**Table-2: Details of Products & Quantities**

| S.No. | PRODUCT NAME | QUANTITY |
|---|---|---|
| 1. | Formaldehyde (37%) | 100 TPD |
| 2. | Melamine Formaldehyde Resin | 42.50 TPD |

| | | |
|---|---|---|
| 3. | Phenol Formaldehyde Resin | 15 TPD |
| 4. | Urea Formaldehyde Resin | 42.50 TPD |

### 1.3 Raw Material Requirement

Raw Material requirement for production of the proposed product are given in table 3.

**Table – 3**
**Details of Raw Materials**

| PRODUCT | NAME OF RAW MATERIAL | QUANTITY | SOURCES |
|---|---|---|---|
| For Formaldehyde (37%) | Methanol (T/D) | **45.0** | Local market |
| | Water (T/D) | **130.0** | Ground water |
| | Silver Granular (T/D) | | Local market |
| Melamine Formaldehyde | Melamine (T/D) | **13.00** | Local market |
| | Formaldehyde (T/D) | **30.00** | Local market |
| | Caustic (T/D) | **0.22** | Local market |
| Phenol Formaldehyde | Phenol (T/D) | **7.50** | Local market |
| | Formaldehyde (T/D) | **8.50** | Local market |
| | Caustic (T/D) | **0.075** | Local market |
| For Urea Formaldehyde | Urea (T/D) | **13.00** | Own Plant |
| | Formaldehyde (T/D) | **30.00** | Local Market |
| | Acetic Acid (T/D) | **0.11** | Local market |
| | Caustic (T/D) | **0.11** | Local market |

### 1.4 Water Requirement

The water requirement of the unit will be met from ground water through tube well. The daily requirement of fresh water will be about 250 $m^3$. The details of water consumption of fresh water uses and generation will be given in Table 4.

**Table 4: Water Requirement**

| S. No. | Particulars | Consumption (KLD) | Generation (KLD) | DISPOSAL |
|---|---|---|---|---|
| 1 | Manufacturing Process | 83 | 0 | No waste water generated |
| 2 | Greenbelt | 7 | 0 | No waste water generated |
| 3 | Cooling | 155 | 8 | Sent to Evaporator and Condensate for re-use |
| 4 | Domestic | 2 | 1.5 | Sent to septic tank followed by soak pit |
| 5 | Washing | 1 | 0.9 | Sent to Evaporator and Condensate for re-use |

### 1.5 Power Requirement

Maximum power requirement for the plant will be 200 KW (Total connected load). The power will be sourced from PSPCL (Punjab State Power Corporation Limited). Solar panel for outer lighting, LED lights for inner lighting will be used as power saver.

1 D.G. set of capacity 350 KVA is also proposed for the project as the backup power source.

### 1.6 Manpower Requirement

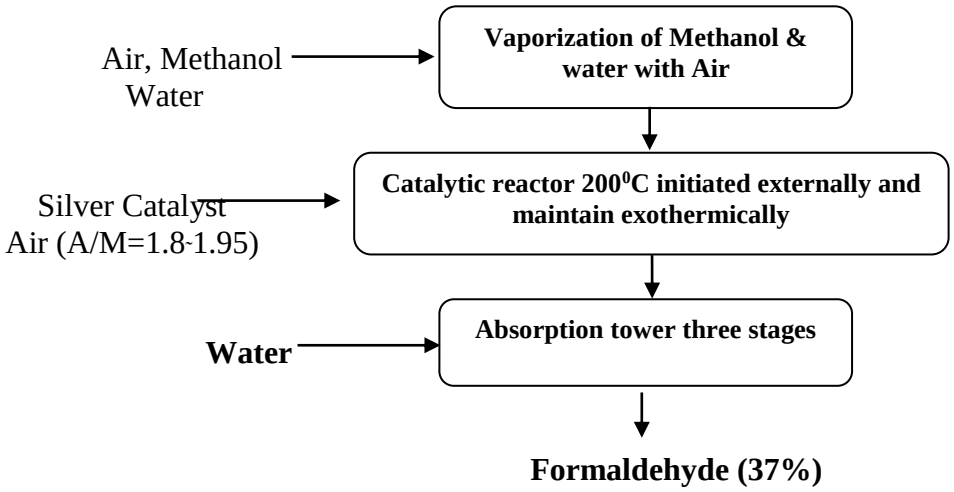
There will be about 25 persons directly/indirectly will be working in the unit. Provision for occupational health of the workers has also been made during operation phase as given in table 5:

**Table 5: Manpower Requirement**

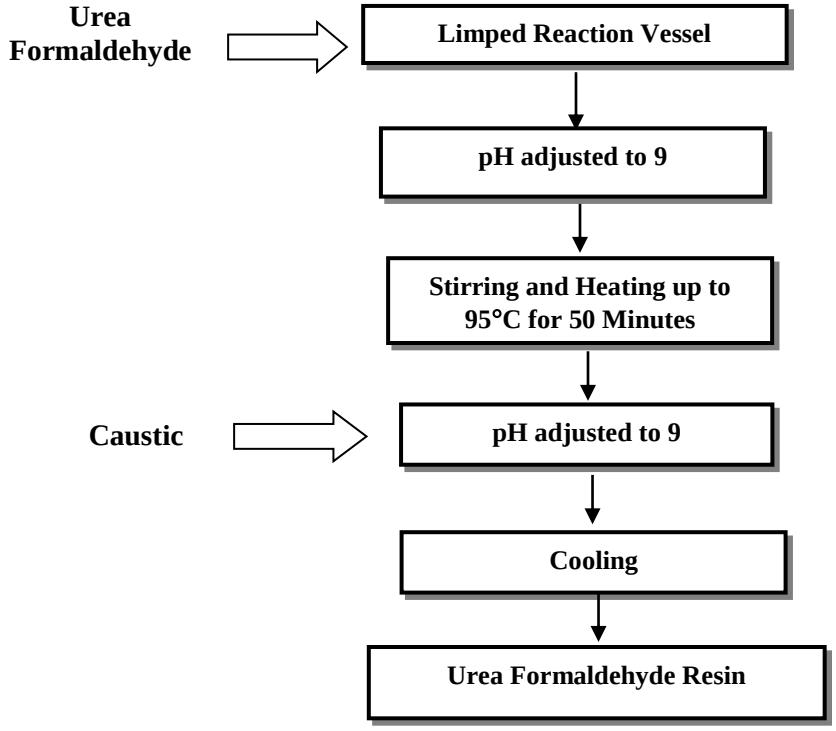
| S. No. | Description | Manpower |
|---|---|---|
| 1. | General Manager | 1 |
| 2. | Production Head | 1 |
| 3. | Production Supervisor | 3 |
| 4. | Plant operators | 5 |
| 5. | EHS Officer | 1 |
| 6. | Plant Helpers | 6 |
| 7. | Utility/Maintenance | 2 |
| 8. | Electrician | 2 |
| 9. | Store Keeper | 1 |
| 10. | Admin | 2 |
| **Total** | | **25** |

### 1.7 MANUFACTURINGPROCESS FLOW DIAGRAM

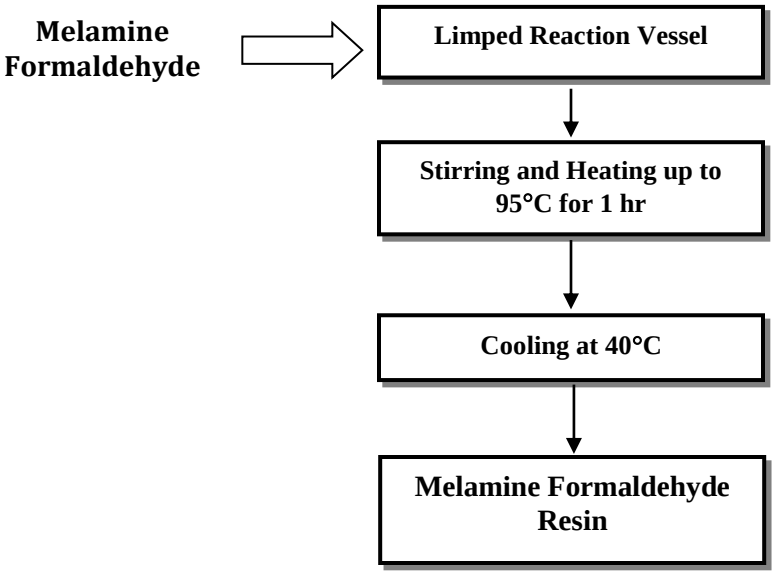
#### 1.7.1 PROCESS OF FORMALDEHYDE



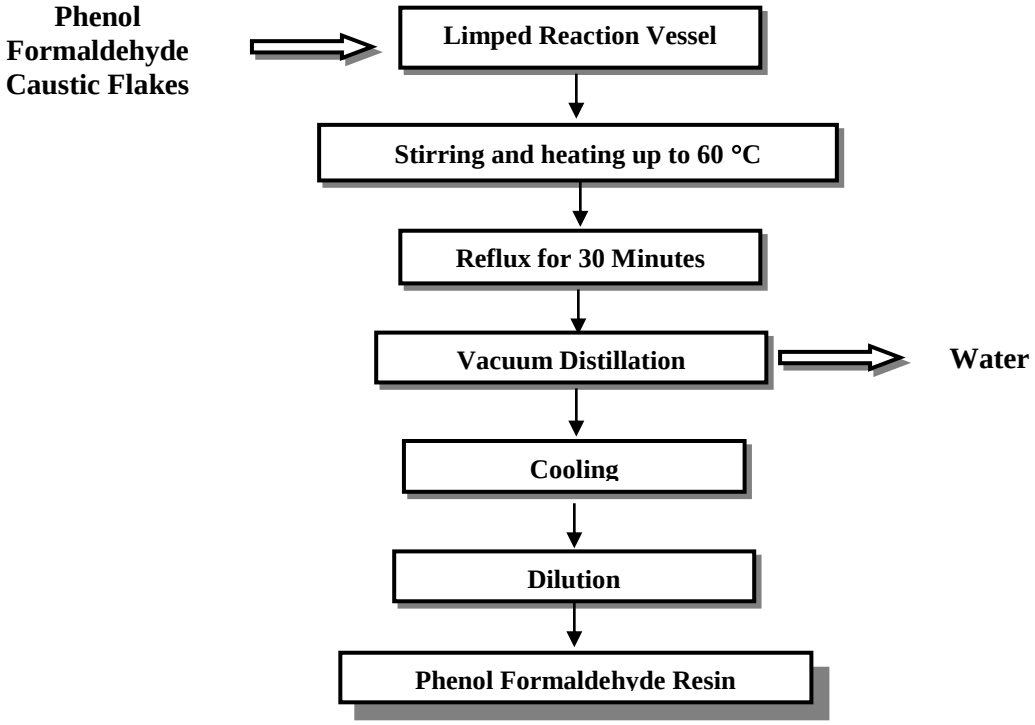
### 1.7.2 Manufacturing of Urea Formaldehyde Resin




### 1.7.3 Manufacturing of Melamine Formaldehyde Resin



### 1.7.4 Manufacturing Process of Phenol Formaldehyde Resin




### 1.8 ENVIRONMENTAL BASELINE STUDY

Various Environmental factors as existing in the study area which are liable to be affected by the activities have been assessed both quantitatively and qualitatively. Baseline environmental data generation of study area was carried out during the period fron15th March, 2019 to 15th June, 2019.

| Parameters | No. of Sites | Description | Permissible Level |
|---|---|---|---|
| Air Quality | 8 | $PM_{10}$ - 72.3µg/$m^3$ and 82.2µg/$m^3$<br>$PM_{2.5}$ - 33.5 µg/$m^3$ to 44.4 µg/$m^3$<br>$SO_2$ – 7.1 µg/$m^3$ to 12.5µg/$m^3$<br>$NO_2$ –20.2 µg/$m^3$ to 30.2µg/m<br>CO – 0.42µg/$m^3$ to 0.59 µg/$m^3$ | 100 µg/ $m^3$<br>60 µg/ $m^3$<br>80 µg/ $m^3$<br>80 µg/ $m^3$<br>80 mg/ $m^3$ |
| Ground Water Quality | 8 | pH - 7.48 to 7.66<br>Hardness - 267.3 to 287.1 mg/l<br>TDS - 386.0 to 424.0 mg/l | 6.5-8.5<br>200-600 mg/l<br>500-2000 mg/l |
| Surface Water Quality | 4 | pH - 7.34 to 7.40<br>Hardness - 138.6 to 150.4 mg/l<br>TDS - 210 to 218 mg/l | --- |

| Parameters | No. of Sites | Description | Permissible Level |
|---|---|---|---|
| | | BOD - <2 mg/l8.4 mg/l | |
| Soil Quality | 8 | pH - 7.68 to 8.01<br>Nitrogen - 2.12 to 6.34 %<br>Organic Matter- 0.66 % to 1.01% | --- |
| Noise Level | 8 | Noise Level (Day) - 44.3 Leq dB(A) to 65.5 Leq dB (A)<br>Noise Level (Night) - 34.2 Leq dB(A) to 45.4 Leq dB(A) | 75 Leq dB (A)<br><br>70 Leq dB (A) |

**1.9 Ecological environment**

Ecological data has been collected through secondary sources and by site visits. The tree species kikar, Jamun, Peepal and Mango etc are the dominant plant species of the study area. Mongoose, porcupine, jungle cat, cobra, krait, snakes, hare, pigeon and variety of birds are the common animals of the study area. No endangered species of plants and animals are found in the study area, so no impact on ecological environment.

**1.10 Sensitive Ecosystem**

Within 10 km distance of the project site, no plant or animal species were found to be on the endangered list. No ecologically sensitive area like biosphere reserve, tiger reserve, and elephant reserve, migratory corridors of wild elephant, wetland, national park and wildlife sanctuary are present within 10km distance of the project site. There is no Reserve and Protected Forests present around the project site of 10 km. Agriculture and industrial workers dominate the occupation structure of the study area. Several induction furnaces, rolling mills, ferroalloy plants, brick kilns, and other small units are present in the study area.

**1.11 Socioeconomic Condition:**

Socioeconomic status has been studied through secondary sources and by site visits. The social requirements identified such as Drinking water requirement, Promotion of Educational institutions and Medical facilities to the villagers (especially Senior Citizens and infants or pregnant ladies). Community centers, recreation facilities etc will also be developed as part of social responsibility.

**1.12 CER Activities (Corporate Environmental Responsibility)**

Proposed project will result in growth of the surrounding areas by increased direct and indirect

employment opportunities in the region including ancillary development and supporting infrastructure. Special emphasis on Financial and Social benefits will be given to the local people.

The company has separately earmarked **Rs. 8.00 lakhs (2% of Project cost)** towards the Corporate Environment Responsibility (CER) Activities as per OM (CER) F. No. 22-65/2017-IA.III dated 01.05.2018.

The Expenditure of CER will be decided after Public Consultation.

**1.13 Green Belt Development**

- Out of the total project area 33% will be utilized for green belt development.
- Plantation will be done as per Central Pollution Control Board (CPCB) Norms & in consultation with the DFO/DM.
- The plantation in and around the project site will help to attenuate the pollution level.
- Native species will be given priority for Avenue plantation.
- The periphery will be devoted to generation of green belt area.

  The plantation would start along with the start of the construction activities of the proposed unit

**1.14 Mitigation Measures**

**1.14.1 Air Pollution Control**

- All the exhaust gas emissions will be channelized all through the process and will be reused for various purposes like heating & remained chemical utilization
- remaining gas will be exhausted through a chimney
- Multi Clone Dust Collector with Boiler as an air pollution control measures to control the emission of particulate matter the flue gas emission will remain well within gaseous emission norms prescribed by the CPCB.
- Scrubber is installed for scrubbing the residual Formaldehyde from the main product stream which also controls the odour problem
- To control the air emissions from D.G. Set, stack height of 4.0 m(AGL) shall be provided
- Green belt will be developed on 33% area of the total project area which will help in attenuating the pollutants emitted by the plant.
- Adequate measures for control of fugitive dust emissions will be taken.

### 1.14.2 Waste Water Treatment

- Fresh water requirement of the project will be met by ground water through tubewell.
- Domestic wastewater @ 1.5 KLD will be discharged in to soak pit through septic tank & will be utilized for greenbelt development to reduce the water consumption.
- No Industrial Effluent generated from the manufacturing process.

### 1.14.3 Noise Management

- Green belt development (plantation of dense trees across the boundary) will help in reducing noise levels in the plant as a result of attenuation of noise generated due to plant operations, and transportation.
- Personal protective equipments like ear plugs and ear muffs will be provided to employees working in the noise prone areas.
- Time to time oiling and servicing and O and M of machineries will be done.
- Acoustic enclosure for heavy machines/equipment/D.G. sets would be used.

### 1.14.4 Odour Management

- Scrubber is installed for scrubbing the residual Formaldehyde from the main product stream
- Cascade system to be used for less exposure.
- Temperature will be kept under control during operation phase.

### 1.14.5 Solid & Hazardous Waste Generation and Disposal

- Boiler ash stored separately & disposed at TSDF site Nimbua, Derabassi.
- Used Oil (0.25 KL/yr.) generated will be sold to authorised recycler.
- Waste Salt will be disposed at TSDF site situated near Nimbua, deraBassi

All the Solid & hazardous waste generated, will be collected, stored separately and disposed off as per the guidelines issued by CPCB &Punjab Pollution Control Board.

### 1.15 ENVIRONMENTAL MANAGEMENT PLAN (EMP)

Breakup of EMP cost of the proposed project is given in the Table below:-

| S. No. | Particulars | Initial Cost (in Rs. Lakhs) | Recurring Cost (in Rs. Lakhs) |
|---|---|---|---|
| 1. | Air Pollution Control | 3.00 | 2.00 |
| 2. | Wastewater Treatment (Soak Pit) | 0.50 | 0.20 |
| 3. | Fire and Safety | 1.50 | 1.00 |
| 4. | Green Belt Development | 1.50 | 0.30 |

| | | | |
|---|---|---|---|
| 5. | Rain Water Harvesting Plan | 1.00 | 0.30 |
| 6. | Occupational Health & Safety | 1.50 | 1.00 |
| | **Total** | **9.00** | **4.80** |

### 1.16 Conclusion

M/s Balaji Overseas will generate a fair amount of direct, indirect and induced employment in the region. The local economy will receive a boost due to employee spending and services generated by the company. Due to the implementation of the project activity there shall be improvement in the standard of living *viz.* better education, improved health, sanitation facilities etc. This is envisaged as a major positive benefit. The company's management shall recruit semi skilled and unskilled workers from the nearby villages due to availability of local labors. The employment provided due to the proposed project would rapidly increase the social status of the villagers.

Company commitment towards environment & using the latest technology, along with optimal usage of available resources will reduce the impact and makes the project viable