DRAFT ENVIRONMENTAL IMPACT ASSESSMENT

Executive Summary of Draft EIA Report

for Proposed Expansion in Production of PF Resin from 3,000 MTM to 6,000 MTM and Hardeners / Catalyst Activators (Cold Blending) from 1200 MTM to 3000 MTM and new product Foundry Consumable (Cold Blending) based products of Proposed Capacity 500 MTM

at Gat No.: 251, 253/4/A, 253/6/A, 253/7/A, 253/8, 253/9, 255, Village: Atkargaon, Post: Mandad, Taluka: Khalapur, District: Raigad, Maharashtra

ToR No.: TO25A0202MH5410522N, Dated: 23/04/2025

Project of Schedule 5(f) Synthetic Organic Chemicals Industry Category A

Study Period: March to May 2025

Monitoring Done By

Excellent Enviro Laboratory & Research Centre Private Limited

Accredited by NABL vide Certificate No. TC-12362

Project Proponent:

M/s. Gargi Huttenes Albertus Pvt. Ltd.,

Gat No.: 251, 253/4/A, 253/6/A, 253/7/A, 253/8, 253/9, 255, Village: Atkargaon, Post: Mandad, Taluka: Khalapur, District: Raigad, Maharashtra

Consultant

Southern Enviro Engineers Pvt. Ltd.
Act Responsible Think Sustainable

Southern Enviro Engineers Pvt. Ltd.

(Certificate No.: NABET/EIA/26-29/RA 0483, Validity: 30.03.2029)

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EXECUTIVE SUMMARY

1.0 Introduction

The project of M/s. Gargi Huttenes Albertus Pvt. Ltd. is an existing unit located at Gat No.: 251, 253/4/A, 253/6/A, 253/7/A, 253/8, 253/9, 255, Village: Atkargaon, Post: Mandad, Taluka: Khalapur, District: Raigad, Maharashtra. The said unit is currently manufacturer of resin and hardeners with capacity of 3000 MTM of resin and 1200 MTM of hardeners / catalyst activators (Cold Blending) as per CTO amendment. After expansion, the unit will intend to add new product foundry consumable (Cold Blending) based products with capacity of 500 MTM and increase in production of resin by 3000 MTM and hardeners/catalyst activators (Cold Blending) by 1800 MTM.

1.1 Purpose of the Report

The purpose of EIA for the proposed expansion project is to assess the environmental impacts associated with increasing production of PF Resin from 3,000 MTM to 6,000 MTM, Hardeners/Catalyst Activators (Cold Blending) from 1,200 MTM to 3,000 MTM, and introduction of Foundry Consumable (Cold Blending) products of 500 MTM capacity.

It aims to evaluate emissions, effluents, hazardous chemical handling, increased resource consumption, and transportation impacts, and to propose specific mitigation measures and an Environmental Management Plan (EMP) to ensure safe, sustainable, and compliant operation of the expanded facility.

1.2 Environmental Clearance

As per the Environmental Impact Assessment (EIA); Notification S.O. 1533, 14.09.2006 and its subsequent amendments issued by the MoEF&CC, Government of India, any project covered under the Schedule of the said notification requires prior Environmental Clearance. It is a Category 'A' project under schedule 5(f) in EIA Notification, 2006, and it is not located in Notified Industrial Area. M/s. Gargi Huttenes Albertus Pvt. Ltd. has started production after obtaining "Consent to Establish" (CTE) and "Consent to Operate" (CTO) for their unit from Maharashtra Pollution Control Board. Company has obtained its "Consent to Establish" (CTE) on Dated: 12/07/2006 before publication of EIA Notification, 2006 i.e.; 14th September 2006 and they constructed existing plant after obtaining of CTE. As the company started before publication of EIA Notification, 2006 & they haven't obtained Environmental Clearance for the said activity. After completion of the project, they obtained "Consent to Operate" (CTO) on Dated: 29/11/2008 from Maharashtra Pollution Control Board

(MPCB). Plant is in operation from 2008 to till date on obtained "Consent to Operate" renewals time to time which is valid up to 30.11.2028

1.3 Terms of Reference

Project received auto generated ToR with Identification No.: TO25A0202MH5410522N, dated 23/04/2025. Now Draft Environmental Impact Assessment (EIA) report is being prepared for the purpose of conducting the Public Hearing.

1.4 Brief Description of Nature, Size and Location of the project

Proposed project is Expansion in Production of PF Resin from 3,000 MTM to 6,000 MTM and Hardeners / Catalyst Activators (Cold Blending) from 1200 MTM to 3000 MTM and new product Foundry Consumable (Cold Blending) based products of Proposed Capacity 500 MTM. Brief description about the nature, size and location of the project is given in **Table 1**. The project location map is given in **Figure 1**, 10 km study area map is given in **Figure 2**, Google image of the project is given in **Figure 3** and project layout map is given in **Figure 4**.

Table 1: Project Details & Environmental Setting in 10 km Study Area of the Project Site

S. N.	Particulars	Details
1.	Project Name	Proposed Expansion in Production of PF Resin from 3,000 MTM to 6,000 MTM and Hardeners / Catalyst Activators (Cold Blending) from 1200 MTM to 3000 MTM and new product Foundry Consumable (Cold Blending) based products of Proposed Capacity 500 MTM at Gat No. 251, 253/4/A, 253/6/A, 253/7/A, 253/8, 253/9, 255, Village: Atkargaon, Post: Mandad, Taluka: Khalapur, District: Raigad, Maharashtra by M/s. Gargi Huttenes Albertus Pvt. Ltd.
2.	Name of the Company	M/s. Gargi Huttenes Albertus Pvt. Ltd.
3.	Address of the Company Corporate Office	M/s. Gargi Huttenes Albertus Private Limited Gat No. 251, 253/4/A, 253/6/A, 253/7/A, 253/8, 253/9, 255, Village: Atkargaon, Post: Mandad, Tal.: Khalapur, Dist.: Raigad, Maharashtra. 410203
4.	Total Area	Existing Plot Area: 37760.00 sq. m Proposed Buit up Area: 5072.519 sq. m Total Plot Area: 37760.00 sq. m

<table>
<tr><td>5.</td><td>Location of Project</td><td>Gat No. 251, 253/4/A, 253/6/A, 253/7/A, 253/8, 253/9, 255, Village: Atkargaon, Post: Mandad, Taluka: Khalapur, District: Raigad, Maharashtra by M/s. Gargi Huttenes Albertus Pvt. Ltd.</td></tr>
<tr><td>6.</td><td>Project Site Latitudes & Longitudes</td><td>
<table>
<tr><th>BP</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>1</td><td>18°46'16.16"N</td><td>73°18'52.39"E</td></tr>
<tr><td>2</td><td>18°46'16.16"N</td><td>73°18'52.41"E</td></tr>
<tr><td>3</td><td>18°46'16.85"N</td><td>73°18'55.28"E</td></tr>
<tr><td>4</td><td>18°46'17.58"N</td><td>73°18'58.16"E</td></tr>
<tr><td>5</td><td>18°46'17.13"N</td><td>73°18'58.43"E</td></tr>
<tr><td>6</td><td>18°46'16.38"N</td><td>73°18'58.75"E</td></tr>
<tr><td>7</td><td>18°46'14.06"N</td><td>73°18'59.38"E</td></tr>
<tr><td>8</td><td>18°46'13.29"N</td><td>73°19'0.15"E</td></tr>
<tr><td>9</td><td>18°46'12.88"N</td><td>73°19'0.11"E</td></tr>
<tr><td>10</td><td>18°46'12.30"N</td><td>73°18'59.89"E</td></tr>
<tr><td>11</td><td>18°46'10.41"N</td><td>73°18'58.11"E</td></tr>
<tr><td>12</td><td>18°46'10.05"N</td><td>73°18'57.93"E</td></tr>
<tr><td>13</td><td>18°46'9.76"N</td><td>73°18'57.28"E</td></tr>
<tr><td>14</td><td>18°46'10.12"N</td><td>73°18'56.95"E</td></tr>
<tr><td>15</td><td>18°46'10.65"N</td><td>73°18'56.31"E</td></tr>
<tr><td>16</td><td>18°46'12.55"N</td><td>73°18'56.15"E</td></tr>
<tr><td>17</td><td>18°46'12.23"N</td><td>73°18'54.46"E</td></tr>
<tr><td>18</td><td>18°46'12.17"N</td><td>73°18'53.98"E</td></tr>
<tr><td>19</td><td>18°46'10.60"N</td><td>73°18'54.11"E</td></tr>
<tr><td>20</td><td>18°46'10.72"N</td><td>73°18'53.08"E</td></tr>
<tr><td>21</td><td>18°46'10.51"N</td><td>73°18'52.38"E</td></tr>
<tr><td>22</td><td>18°46'12.70"N</td><td>73°18'52.35"E</td></tr>
<tr><td>23</td><td>18°46'12.71"N</td><td>73°18'52.13"E</td></tr>
<tr><td>24</td><td>18°46'12.84"N</td><td>73°18'51.80"E</td></tr>
<tr><td>25</td><td>18°46'13.18"N</td><td>73°18'51.70"E</td></tr>
<tr><td>26</td><td>18°46'13.13"N</td><td>73°18'51.17"E</td></tr>
<tr><td>27</td><td>18°46'13.99"N</td><td>73°18'51.78"E</td></tr>
<tr><td>28</td><td>18°46'14.66"N</td><td>73°18'51.99"E</td></tr>
</table>
</td></tr>
<tr><td>7.</td><td>Topo Sheet No.</td><td>47F/1, 47F/2, 47F/5, 47F/6</td></tr>
<tr><td>8.</td><td>Project Proponent</td><td>Mr. Gaurav Kapur (CEO/Executive Director)</td></tr>
<tr><td>9.</td><td>Name of the Product</td><td>1) P. F. Resin
2) Hardeners / Catalyst Activators (Cold Blending)
3) Foundry Consumable (Cold Blending)</td></tr>
</table>

<table>
<tr><td>10.</td><td>Production Capacity</td><td colspan="4"><table>
<tr><th rowspan="2">S. N.</th><th rowspan="2">Name of the Product</th><th>Existing</th><th>Proposed</th><th>Total</th></tr>
<tr><th colspan="3">Quantity (MT/Month)</th></tr>
<tr><td>1</td><td>P. F. Resin</td><td>3000</td><td>3000</td><td>6000</td></tr>
<tr><td>2</td><td>Hardeners / Catalyst Activators (Cold Blending)</td><td>1200</td><td>1800</td><td>3000</td></tr>
<tr><td>3</td><td>Foundry consumable (Cold Blending)</td><td>0</td><td>500</td><td>500</td></tr>
<tr><td></td><td>Total</td><td>4200</td><td>5300</td><td>9500</td></tr>
</table></td></tr>
<tr><td>11.</td><td>Raw Material</td><td colspan="4">Is provided in Table 3 below</td></tr>
<tr><td>12.</td><td>Water Requirement</td><td colspan="4">Total Water Requirement: 169 KLD</td></tr>
<tr><td>13.</td><td>Sources of Water</td><td colspan="4">Ground water/Tanker water supply</td></tr>
<tr><td>14.</td><td>Man power</td><td colspan="4">Existing Man power: 235 Nos.
Proposed Man Power: 65 Nos.
Total Manpower: 300 Nos.</td></tr>
<tr><td>15.</td><td>Electricity Consumption</td><td colspan="4">Existing load: 866 KW
Proposed load: 0 KW
Total Load: 866 KW</td></tr>
<tr><td>16.</td><td>DG Set Capacity</td><td colspan="4">Existing – 2 x 320 KVA, 1 x 40 KVA
Proposed – 0
Total – 2 x 320 KVA, 1 x 40 KVA</td></tr>
<tr><td>17.</td><td>Nearest Habitation</td><td colspan="4">Atkargaon – 0.02 km - SE</td></tr>
<tr><td>18.</td><td>Nearest Town, city, district Headquarters along with distance in km.</td><td colspan="4">Nearest Town – Khopoli – 2.4 km - NE
Nearest Taluka Place – Khalapur – 7.2 km - NNW
Nearest District HQ – Raigad (Alibagh) – 49 km - WSW</td></tr>
<tr><td>19.</td><td>Nearest Highway</td><td colspan="4">Mumbai – Pune Highway – 0.57 km - NE</td></tr>
<tr><td>20.</td><td>Nearest Railway Station</td><td colspan="4">Khopoli Railway Station - 3.8 km - ENE</td></tr>
<tr><td>21.</td><td>Nearest Airport</td><td colspan="4">Navi Mumbai International Airport – 36.57 km - NW</td></tr>
<tr><td>22.</td><td>Nearest Seaport</td><td colspan="4">Mumbai Port Trust, Maharashtra – 53.42 km - NW</td></tr>
<tr><td>23.</td><td>Water Bodies in 10 km Study Area</td><td colspan="4"><table>
<tr><th>S. N.</th><th>Water Bodies in 10 km Study Area</th><th>Distance in km</th><th>Direction</th></tr>
<tr><td>1</td><td>Stream from Adoshi Dam</td><td>0.51</td><td>S</td></tr>
<tr><td>2</td><td>Adoshi Dam</td><td>1.2</td><td>SSE</td></tr>
</table></td></tr>
</table>

		3	Bati lake	2.0	SW
		4	Patalganga River	3.4	N
		5	Dhamani Lake	5.8	NW
		6	Ulhas River	6.0	E
		7	Lonavala Lake	8.5	SE
		8	Shivsagar Lake	8.5	SE
		9	Shivaji Lake	8.0	SSE
		10	Uttara River	9.5	SSE
		11	Ghotawade Dam	9.0	S
		12	Amba River	5.0	S
		13	Bhogeshwar River	7.5	SSW
		14	Balganga River	4.5	WSW
		15	Donavat Reservoir	6.0	WNW
24.	Forest in 10 km Study Area	**S. N.**	**Forests in 10 km Study Area**	**Distance in km**	**Direction**
		1	Reserved Forest (RF)	5.5	WNW
		2	PF near Navandhe village	7.5	NW
		3	RF near Project site	1.0	NE
		4	PF near Honad village	1.0	SW
		5	RF near Khambewadi village	1.5	SW
		6	RF near Durshet village	8.0	SW
		7	RF near Gohe village	9.5	WSW
		8	RF near Narangi village	4.0	W
		9	RF near Gondhav village	9.0	SSW
25.	Project Cost	Existing Project Cost as on 31.04.2025: Rs. 54.7574 Crore Proposed Project Cost: Rs. 31.507 Crore Total Project Cost: Rs. 86.2644 Crore			
26.	EMP Cost	Rs. 4.70 Crores or Rs. 470.34 Lakh			
27.	CER Cost	Will be including in Final EIA as per raised public hearing demands			

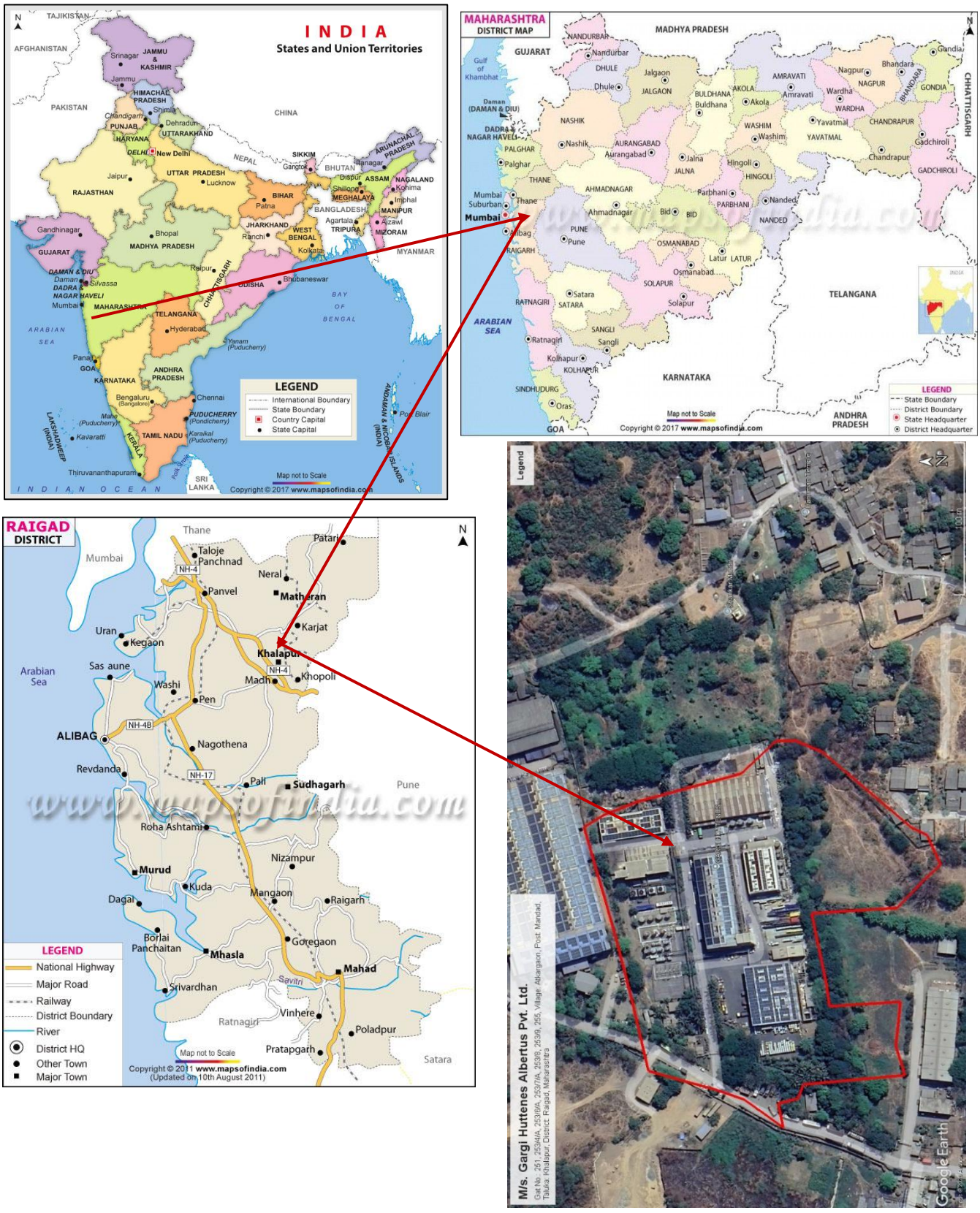

Figure 1: Location Map of the Project Site

Figure 2: 10 km Topographic Study Area Map of the Project Site

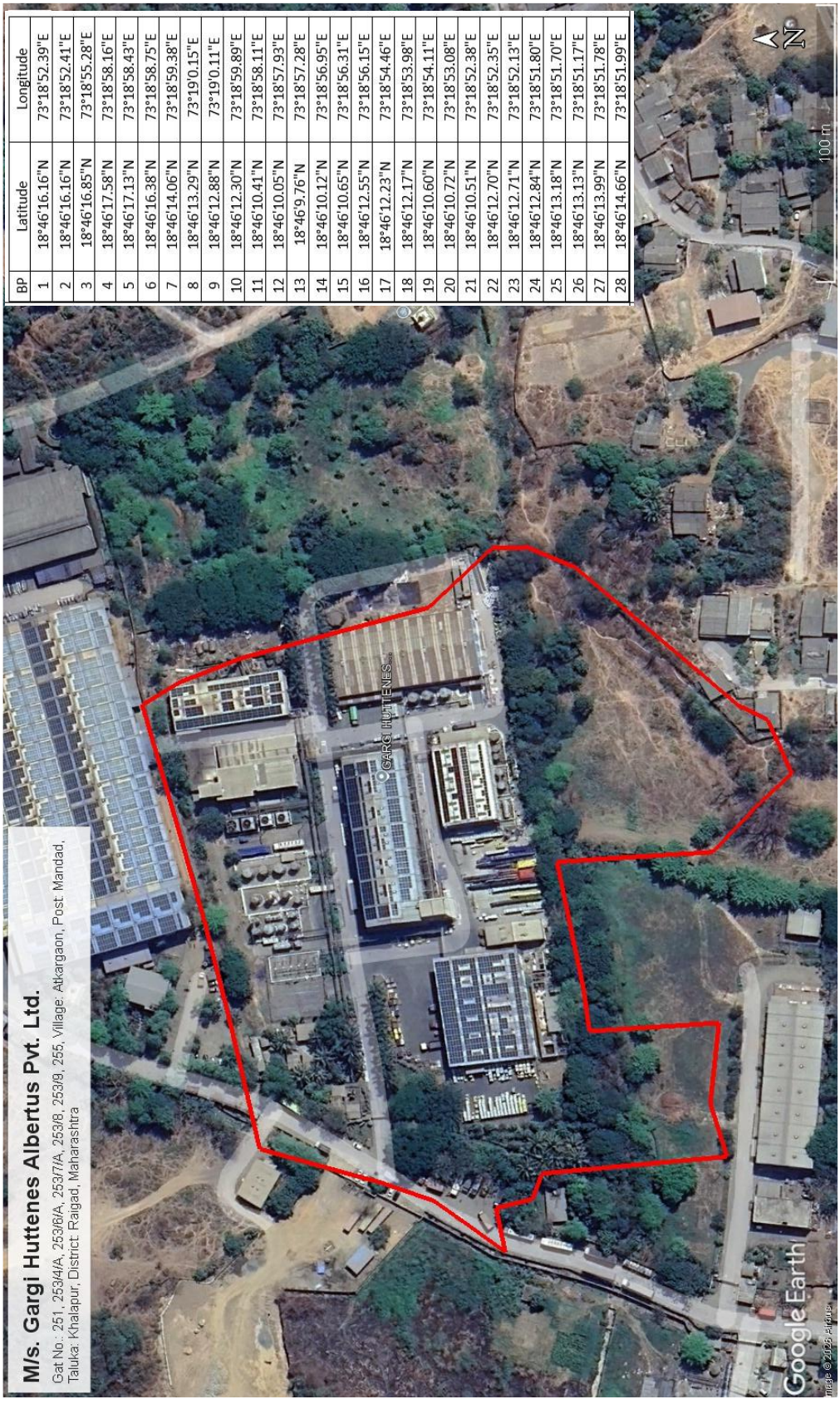

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Figure 3: Google Image of the Project

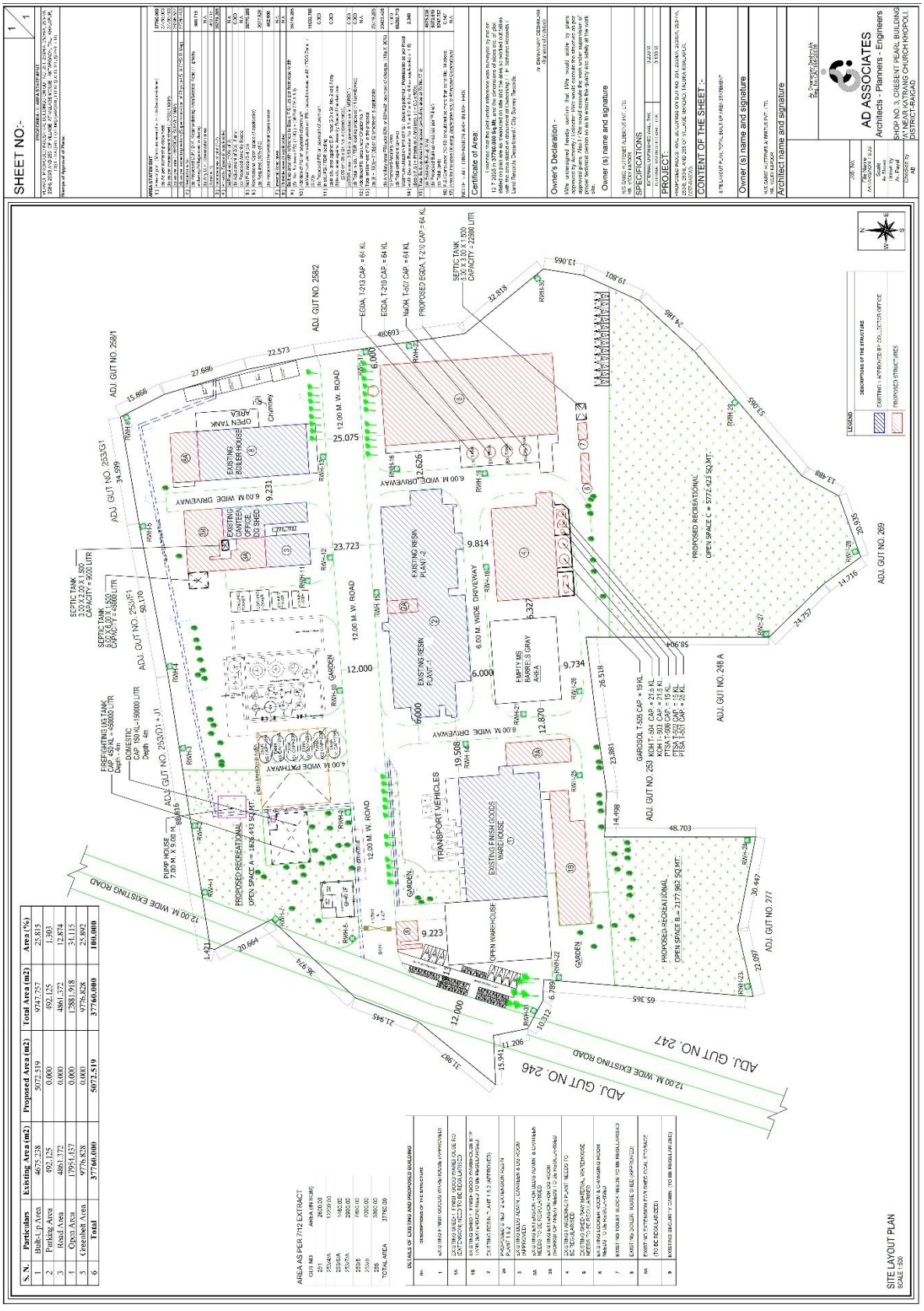


Figure 4: Project Layout Map

2.0 Project Description

2.1 Brief Description of Project

M/s. Gargi Huttenes Albertus Pvt. Ltd. operates an existing manufacturing unit at Atkargaon, Raigad, producing Resin and Hardeners/Catalyst Activators, and is now proposing capacity expansion along with addition of foundry consumable products.

Table 2: Existing and Proposed Production Details

S. N.	Product	Existing Quantity MTM	Proposed Quantity MTM	Total Quantity after Expansion MTM
1	P.F Resin **CAS No. 9003-35-4**	3000	3000	6000
2	Hardeners / Catalyst Activators (Cold Blending)	1200	1800	3000
3	Foundry consumable (Cold Blending)	0	500	500

Project Proponents

The company is promoted by well experienced and specialized hands of Mr. Gaurav Kapur (CEO/Executive Director). He is enriched with vast experience and is in the Board of Directors. The company is well-regarded for its strong business ethics, quality commitment, and professional approach, which has helped it maintain a leading and competitive position in the market.

2.2 Raw Material Requirement

The raw materials will be procured from different manufactures/vendors across India and World. All raw materials will be transported to site in truckload by road transport and sea. At site, dedicated storage facility will be provided for storage of raw materials. Details list of raw material is given in below **Table 3.**

Table 3: Details of Raw Materials

S. N.	Name of Raw Materials	CAS No.	Quantity (MT/Month)		
			Existing	Proposed	Total
	P.F. (Phenol-Formaldehyde) Resin: 6000 MT/Month				
1.	Phenol	108-95-2	1300	1300	2600
2.	Formaldehyde (37-40%)	50-00-0	735	735	1470
3.	Para formaldehyde	30525-89-4	325	325	650
4.	Methanol	67-56-1	173	173	346
5.	Caustic (NaOH)	1310-73-2	136	136	272
6.	Water/Reuse Distillate	7732-18-5	440	440	880

7.	Remax/Equivalents	-	200	200	400
8.	Potassium Hydroxide	1310-58-3	93	93	186
	Total		**3402**	**3402**	**6804**
	Hardener/Catalyst activator (Cold Blending): 3000 MT/Month				
1.	Para toluene sulfonic Acid (PTSA) 70%	anhydrous form 104-15-4	200	300	500
3.	Sulphuric Acid	7664-93-9	13	19.5	32.5
2.	Triethyl amine (TEA)	121-44-8	137	205.5	342.5
3.	Ethylene Glycol Diacetate (EGDA)	111-55-7	313	469.5	782.5
4.	Methylene diphenyl diisocyanate (MDI)	4,4'-MDI, 101-68-8	350	525	875
5.	REMAX/Equivalents	-	150	225	375
6	Water	7732-18-5	37	55.5	92.5
	Total		**1200**	**1800**	**3000**
	Foundry consumables (Cold Blending): 500 MT/Month				
1.	Chromite Sand	1308-31-2	0	175	175
2.	Ceramic Sand	-	0	175	175
3.	Dimethyl formamide	68-12-2	0	25	25
4.	Methylene dichloride	75-09-2	0	25	25
5.	Sodium Salt	-	0	100	100
	Total		**0**	**500**	**500**

2.3 Water Requirement

The water requirement in the project will be for industrial purpose, in process, domestic consumption, dust suppression and greenbelt development. Existing water requirement of the project is 100.31 KLD and water requirement for proposed expansion will be 68.76 KLD. Total water requirement of the proposed project after expansion will be 169.07 KLD. The details of water requirement for different purposes are presented in **Table 4** & Water Balance Diagram of the proposed expansion project activity is shown in below **Figure 5.** Industry obtained NOC for ground water abstraction for their project from Central Ground Water Authority, Government of India, Ministry of Jal Shakti vide NOC No.: NOC/IND/MH/2024/1137, Dated: 10/02/2025 valid from 12/12/2024 to 11/12/2027

Table 4: Water Requirement

S. N.	Item	Existing Water Requirement (KLD)	Proposed Water Requirement for Expansion (KLD)	Total Water Requirement after Expansion (KLD)

1	Total Industrial Water	84	45.5	129.5
2	Domestic Purpose	10.5	3.0	13.5
3	Dust Suppression	1.0	1.0	2.0
4	Greenbelt Development	4.81	18.26	23.07
5	Fire Hydrate Testing	0	1.0	1.0
	Total	**100.31**	**68.76**	**169.07**
	Total Water Requirement (Rounded Off)			**169**

- Total water requirement is 169 KLD, out of which 143 KLD of fresh water and 26 KLD of recycled water from ETP will be reused.
- Total Industrial water requirement is 129.5 KLD, out of which 103.5 KLD of fresh water and 26 KLD of recycled water from ETP will be used.

Mode of Disposal:

- Domestic Waste Water 10.8 KLD will be sent to ETP.
- Total Industrial wastewater generation from the proposed project will be 21.5 KLD and reuse in process. For cooling towers.
- 40 KLD ETP for ZLD system is proposed.
- The raw water will be sourced from tube well, Tanker for low TDS water (Ground water and Surface Tanker) and recycle from ETP.

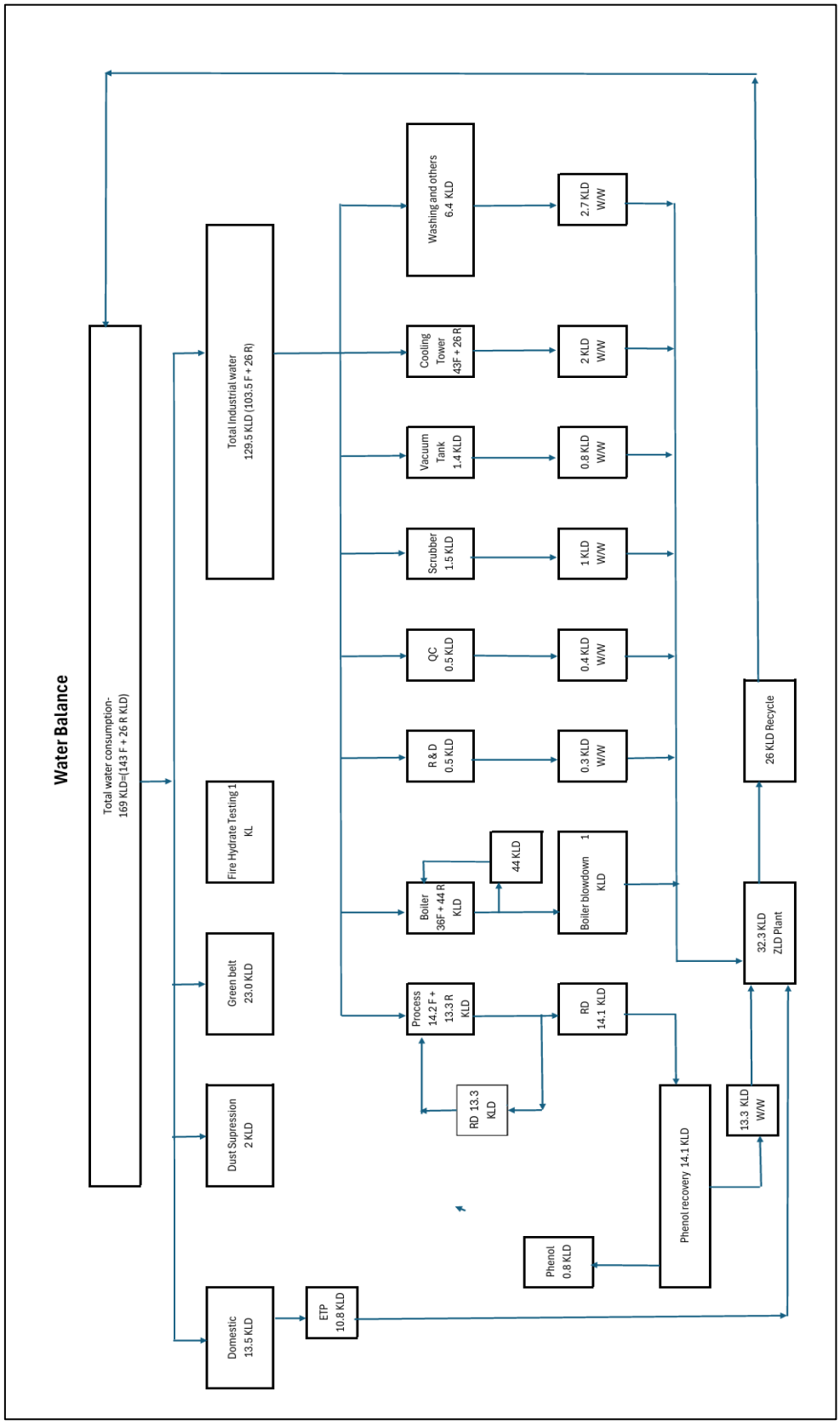


Figure 5: Water Balance Diagram

2.4 Land Requirement

The project is located in 37760.0 sq. m land. There will not be change in land use as the land already has converted in Industrial Area. Land Breakup Details are given below in **Table 5.**

Table 5: Details of Land Breakup

S. N.	Particulars	Existing Area (m^2)	Proposed Area (m^2)	Total Area (m^2)	Area (%)
1	Built Up Area	4675.238	5072.519	9747.757	25.815
2	Parking Area	492.125	0.0	492.125	1.303
3	Road Area	4861.372	0.0	4861.372	12.874
4	Open Area	17954.437	0.0	12881.918	34.115
5	Greenbelt Area	9776.828	0.0	9776.828	25.892
	Total	**37760.00**	**5072.519**	**37760.0**	**100.0**

2.5 Power Requirement

Total Power requirement is given in **Table 6.**

Table 6: Power Requirement

S. N.	Particular	Quantity	Source
1	Existing	866 kW	MSEDCL
2	Proposed	0 kW	
	Total	**866 kW**	

Backup Power: DG Set Provided

Existing DG Set: 2 X 320 KVA and 1 X 40 KVA**,** Proposed DG Set: 0

Total DG Sets after expansion: 3 Nos.

Total Power Generation Capacity of all 3 DG sets = 680 KVA

2.6 Man Power Requirement

The manpower required for administration, production and other associated activities is mostly recruited locally without any difficulty. The total manpower required is 300 persons after expansion of supervisory nature, skilled, semiskilled and casual category. The details of employment are given in **Table 7.**

Table 7: Man Power Requirement

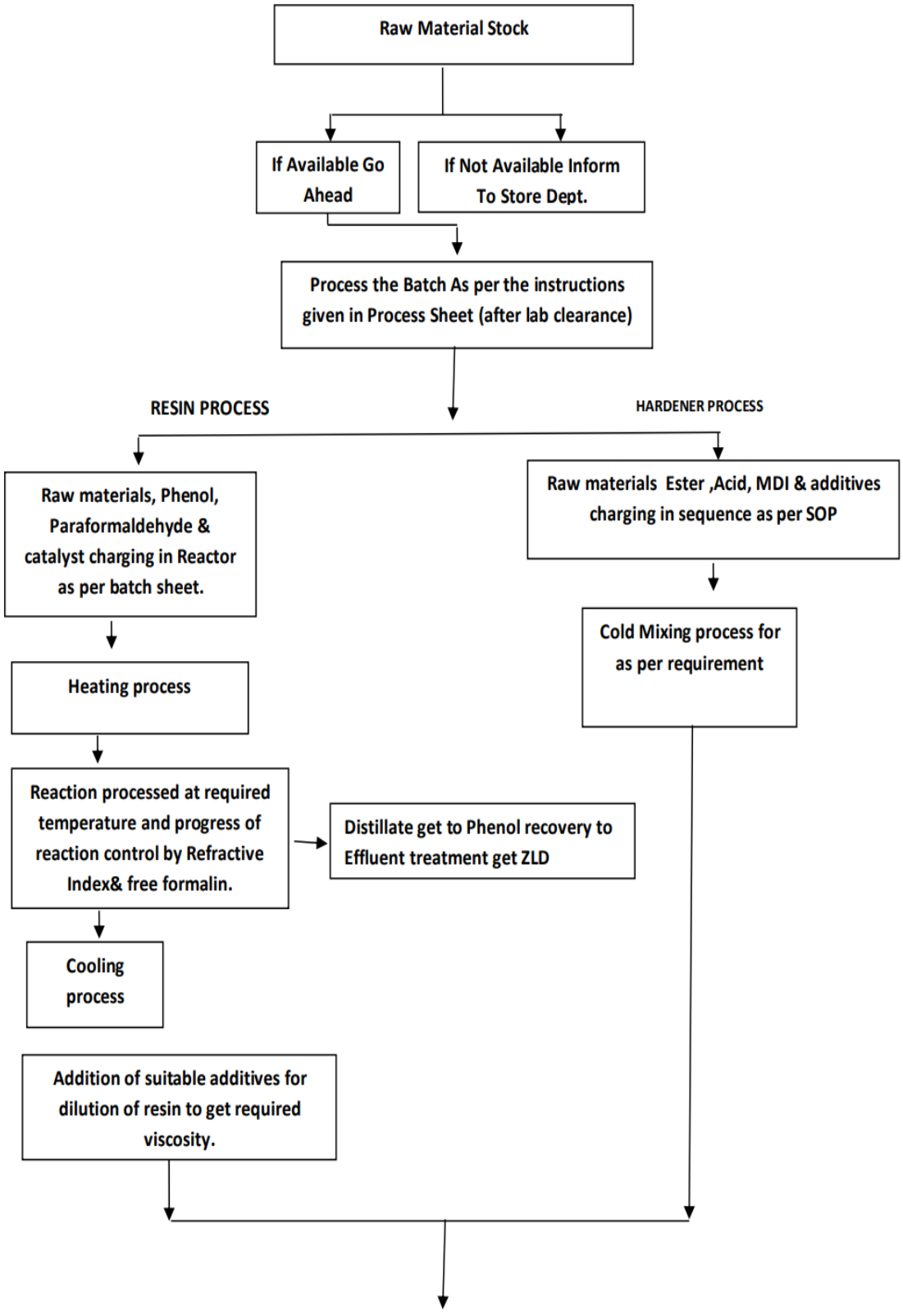
Man Power (Skilled and Unskilled)	Existing	Proposed	Total
	235 no.	65 no.	300 no.

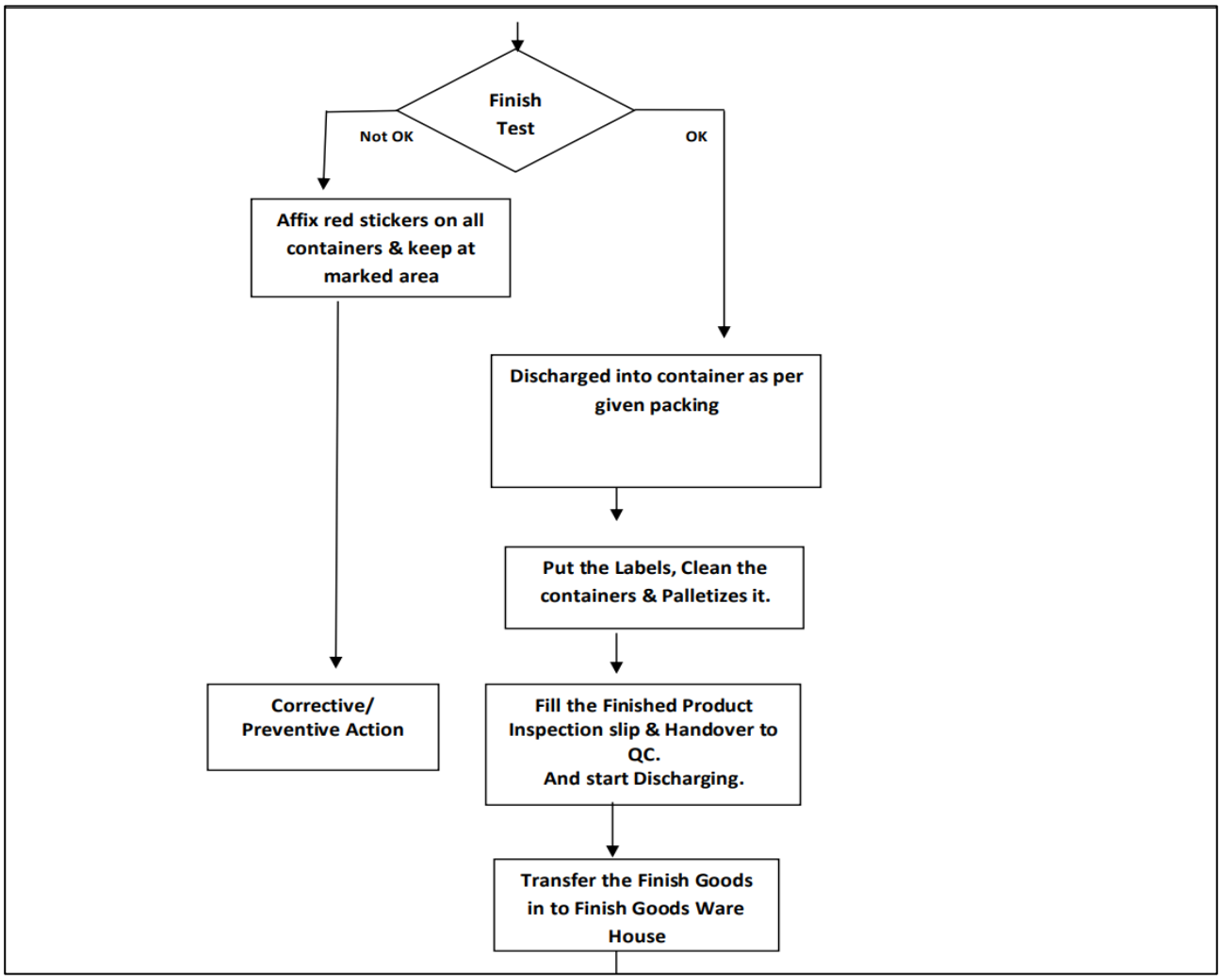
2.7 Process Description and Technology

Provide step by step process description mentioning raw materials for all 3 products separately:

Process Details of P.F. Resin and Hardner/Catalyst Activators manufacturing is given in below flow chart

Production Process (Existing)





Process Details of Proposed Foundry Consumables is given in below flow chart:

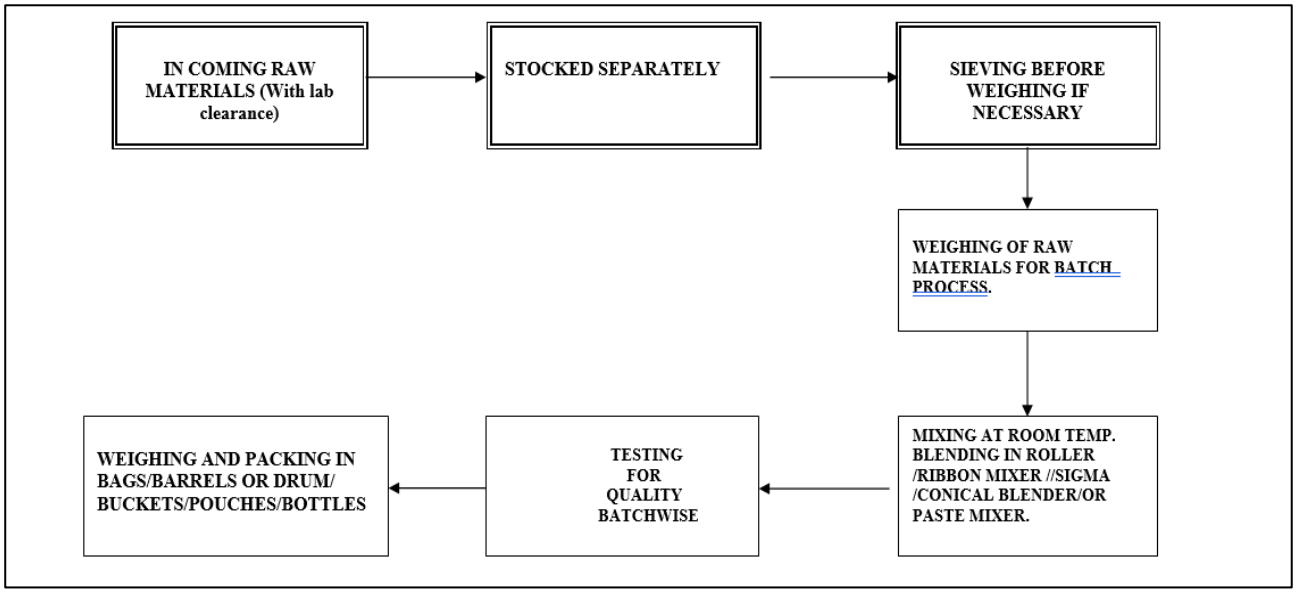


Figure 6: Process Flow Chart

3.0 Study Period (Baseline Environmental Studies)

The baseline data generation for the EIA-EMP has been carried out during March to May 2025 i.e.; Pre Monsoon season for three months

Environmental Components of Study

The environmental components like Meteorology, Ambient Air Quality, Water Quality, Noise Levels, Soil Quality, Geology & Hydrology, Traffic study and Socio-economic conditions which are most likely to be influenced by the proposed project were carried out during the study period. Secondary data like meteorological data from Indian Meteorological Department (IMD), Geology, Hydrogeology, Census data were collected from various government and non-government agencies.

3.1 Meteorology

3.1.1 Climatic Conditions

Atkargaon (Khalapur, Raigad) experiences a tropical monsoon climate with high humidity and moderate to heavy winds during monsoon. Summers are warm, while winters are mild and pleasant.

Temperature:

The temperature typically ranges from about 15°C in winter to around 35–38°C in peak summer. The annual average temperature remains around 25–28°C.

Rainfall:

The area receives heavy rainfall during the southwest monsoon (June–September). Average annual rainfall is about 3000–3500 mm, with most precipitation concentrated in monsoon months.

3.2 Ambient Air Quality Status

The status of ambient air quality within the study area was monitored for the period of during March to May 2025 at 8 locations including the project site and in 10 km study area villages. Total 8 sampling locations were selected based on the meteorological conditions considering upwind and downwind directions. The levels of Respirable Particulate Matter (PM10), Fine Particulates (PM2.5), Sulphur Dioxide (SO2,) and Oxides of Nitrogen (NOX) were monitored. Based on the above, the AAQ stations have been identified and locations of Ambient Air Quality, Noise, Ground and Soil monitoring stations are presented in **Table 8**. The minimum and maximum values of PM_{10}, $PM_{2.5}$, SO_2, NOx & CO are summarized in **Table 9, 10, 11, 12 & 13.** Combined Baseline Monitoring Location map is attached in **Figure 7.**

Figure 7: Combined AAQ, Noise Level, Ground and Surface Water and Soil Sampling Monitoring Location Map within 10 km Study Area

Table 8: Combined Ambient Air Quality, Noise, Ground and Soil Monitoring Stations

Code	Monitoring Locations	Distance (km) /Dir. w.r.t Site	Justification
1	Project Site	-	Reference
2	Mandad Atkargaon	0.2 / ESE	Nearest Habitation
3	Katarang	2.7 / ENE	Downwind Direction
4	Vasarang	3.9 / NE	Downwind Direction
5	Shedavali	4.8 / NE	Downwind Direction
6	Sanjgaon	2.1 / NW	Crosswind Direction
7	Honad	1.0 / SW	Upwind Direction
8	Kumbhachiwadi	1.7 / SSE	Upwind Direction

Summary of Ambient Air Quality Results

Table 9: Particulate Matter – PM_{10}

Location Name	A1	A2	A3	A4	A5	A6	A7	A8
Minimum	20.7	20.6	30.9	22.3	22.5	20.3	20.5	20.8
Maximum	40.6	40.4	42.9	40.2	44.4	38.5	44.9	42.7
Average	27.5	26.3	35.6	31.8	32.4	26.6	35.5	32.7
98th Percentile	37.7	36.6	41.9	38.2	42.4	36.6	44.9	41.8
CPCB Standards	**100**							

All Values are in µg/m^3

Table 10: Particulate Matter – PM2.5

Location Name	A1	A2	A3	A4	A5	A6	A7	A8
Minimum	16.3	24.5	22.5	26.6	20.8	20.1	22.0	12.6
Maximum	38.3	42.9	32.9	44.3	34.7	36.0	36.1	34.6
Average	26.3	32.9	27.4	36.5	26.7	27.0	27.7	19.6
98th Percentile	35.5	40.9	32.7	44.3	33.7	35.1	35.5	33.6
CPCB Standards	**60**							

All Values are in µg/m^3

Table 11: Sulphur Dioxide - SO_2

Location Name	A1	A2	A3	A4	A5	A6	A7	A8
Minimum	12.5	11.0	16.7	20.4	10.4	12.8	20.8	20.4
Maximum	22.6	31.0	30.7	28.5	30.2	34.8	34.6	28.5
Average	15.9	19.5	23.6	24.1	15.5	22.9	30.6	24.2
98th Percentile	21.6	31.0	29.7	28.4	26.3	33.8	34.6	28.5
CPCB Standards	**80**							

All Values are in µg/m^3

Table 12: Oxides of Nitrogen – NOx

Location Name	A1	A2	A3	A4	A5	A6	A7	A8
Minimum	16.7	16.4	14.6	24.1	14.5	20.0	20.2	12.6
Maximum	36.7	34.4	38.6	36.2	34.4	36.0	32.1	28.4
Average	27.7	23.7	31.6	32.2	24.5	25.5	25.8	18.1
98th Percentile	36.7	33.5	38.6	36.2	34.3	34.1	30.2	28.2
CPCB Standards	**80**							

All Values are in $\mu g/m^3$

Table 13: Carbon Monoxide – CO

Location Name	A1	A2	A3	A4	A5	A6	A7	A8
Minimum	0.0	0.3	0.5	0.4	0.0	0.3	0.0	0.1
Maximum	0.4	0.6	0.7	0.5	0.4	0.6	0.5	0.4
Average	0.1	0.4	0.6	0.4	0.1	0.4	0.1	0.2
98th Percentile	0.3	0.5	0.7	0.5	0.4	0.6	0.3	0.3

All Values are in mg/m^3

Conclusion

The analysis of ambient air quality data for three months consequently indicates good ambient air quality conditions at site as well as around the site upwind as well as downwind. Particulate matter PM10 as well as PM2.5 is within prescribed limits. SO2 and NOx levels are well below the limits prescribed hence overall picture as far as ambient air quality concerned is positive. As per the baseline data collection, as per the baseline data collection, the maximum value of PM_{10} was recorded at Honad – 44.9 $\mu g/m^3$ and minimum value at Sanjgaon – 20.3 $\mu g/m^3$. The maximum value of PM2.5 was recorded at Vasarang – 44.3 $\mu g/m^3$ and minimum value at Kumbhachiwadi – 12.6 $\mu g/m^3$. The maximum value of SO_2 was recorded at Sanjgaon – 34.8 $\mu g/m^3$ and minimum value at Shedavali – 10.4 $\mu g/m^3$. The maximum value of NO_x was recorded at Katarang – 38.6 $\mu g/m^3$ and minimum value at Kumbhachiwadi – 12.6 $\mu g/m^3$. The maximum value of CO was recorded at Katarang – 0.7 mg/m^3 and minimum value at Project site, Shedavali and Honad – 0.0 mg/m^3.

3.3 Ambient Noise Levels

Ambient noise level monitoring was carried out at the 8 monitoring locations; those were selected for ambient air quality monitoring. The monitoring results are summarized in **Table 14.**

Table 14: Noise Levels during Study Period

Equivalent Noise Levels	N1	N2	N3	N4	N5	N6	N7	N8
(Day) L_{Max}	72.2	54.8	54.8	54.8	54.6	54.8	54.8	54.8
(Day) L_{Min}	58.6	38.8	36.4	40.2	40.6	38.4	44.2	40.4
(Night) L_{Max}	68.2	44.8	44.8	44.4	44.6	44.8	44.6	44.6
(Night) L_{Min}	58.4	38.6	40.4	26.8	36.2	40.4	40.4	38.6
L_d	**62.22**	**46.6**	**48.93**	**49.09**	**50.1**	**48.68**	**51.28**	**49.53**
L_n	**62.37**	**41.83**	**42.7**	**39.48**	**40.53**	**42.68**	**42.75**	**42.1**
CPCB Ld	75	55	55	55	55	55	55	55
Ln	70	45	45	45	45	45	45	45

***All values in dB(A)**

Conclusion

The Maximum Noise (day) value was observed 72.2 dB(A) at Project Site (N1) and the Minimum Noise (day) value was observed 54.6 dB(A) at Shedavali (N5). The Maximum Noise (night) value was observed 68.2 dB(A) at Project Site (N1) and the Minimum Noise (night) value was observed 44.4 dB(A) at Vasarang (N4). The maximum and minimum day time equivalent noise levels were found in the range of 46.6 to 62.22 dB(A). The maximum and minimum night time equivalent noise levels were found in the range of 39.48 to 42.75 dB(A).

3.4 Ground Water and Surface Water Quality

The WQI values in the study area range from 21.0 (Excellent) to 116.35 (Poor). Most locations such as Project Site, Mandad Atkargaon, Katarang, Vasarang, and Honad fall under the good category, indicating water suitable for general usage with minimal treatment. Locations like Shedavali and Kumbhachiwadi show Excellent water quality, safe for potable purposes. However, Sanjgaon shows Poor water quality (WQI 116.35), indicating high pollution load and requiring substantial treatment before utilization.

Table 15: Surface Water Sampling Locations

S. N.	Location	Distance/Dir. w.r.to project site
SW1	Patalganga River Near Dev Nhave Village	2.8 km / NW
SW2	Patalganga River Near Golewadi Village	4.0 km / SW
SW3	Adoshi Dam	1.2 / SSE

SW4	Bati lake	2.0 / SW
SW5	Dhamani Lake	5.8 / NW
SW6	Donavat Reservoir	6.0 / WNW
SW7	Balganga River near Donavat Village	6.42 / WNW
SW8	Amba River near Chavani Village	5.43 / SE

Conclusion:

- pH of the surface water collected ranged from 7.48 – 7.87
- TDS was found to be 301 - 335 mg/l.
- Total hardness was found to be 204.14 – 251.12 mg/l.
- Nitrates were found 0.15 – 0.40 mg/l.
- Total Coliform in water was 1500 -1648 MPN/100 ml.

Total Coliform and Fecal Coliform are biological indicators of contamination. The presence of total coliforms (1500 -1648 MPN/100 ml) and fecal coliforms (100-300 MPN/100 ml) in all 8 surface water samples indicates mild bacteriological contamination. Although the observed levels are within permissible limits of IS 2296:1992 (Class C: 5,000 MPN/100 ml for total coliforms), their presence suggests potential contamination sources such as agricultural runoff, domestic discharge, or animal waste in the vicinity. Continued monitoring and source control are recommended to prevent further degradation

3.5 Soil Quality

Conclusion:

- pH of the soil samples was found to be in the range of 7.38 – 8.01.
- Organic Corbon of the soil samples was found to be in the range of 0.24 – 2.59
- Soils are sandy clay loam predominantly.
- Nitrogen as N is varying from 244.0 – 1410.0 kg/Ha.
- Phosphorus was found in the range of 14.16 – 398.41 kg/Ha.
- Potassium was found in the range of 119.0 – 126.0 kg/Ha.
- Conductivity was observed in the range of 223.2 – 1096.0 μS/cm.

Overall, the soil quality in the study area can be considered moderate to good with some variability across parameters. The soil is generally suitable for agricultural use, but site-specific nutrient management (especially organic carbon, nitrogen, and potassium) is recommended to improve and maintain soil fertility.

3.6 Land Use / Land Cover Study

Land use / Land Cover area statistics is given in **Table 16.**

Table 16: Land Use/Land Cover Area Statistics

LU/LC Classification System within 10 km Radius of Project Site Area				
S. N.	**Level-I**	**Level-II**	**Area (sq. km²)**	**Percentage (%)**
1	Built-up land	Settlement	22.14	6.84
		Industrial Settlement	12.86	3.97
		Road Infrastructure	6.48	2.00
		Railway Line Area	1.59	0.49
2	Agricultural Land/ Crop Land	Single Crop	62.48	19.29
		Double Crop	19.41	5.99
3	Forest	Protected Forest	0.23	0.07
		Reserved Forest	120.77	37.29
		Fairly Dense mixed jungle	2.94	0.91
		Open Mixed Jungle	5.52	1.70
4	Open Scrubs/Wastelands	Open Scrub	45.08	13.92
		Wasteland	12.40	3.83
5	Waterbodies	River/Nala/Stream/Canal	7.12	2.20
		Dam/Pond/Lake	4.36	1.35
6	Mines Area	Stone Quarry	0.49	0.15
		Total	**323.87**	**100.00**

3.7 Biological Environment

The biological environment of the study area is predominantly rural in nature and influenced by the Western Ghats ecosystem. The area is characterized by agriculture-dominated land with sparse to moderate vegetation, comprising common tree species such as mango, neem, banyan, peepal, jamun, and babul, along with plantation crops like coconut and cashew. Natural vegetation exists in small patches along field boundaries and roadsides. The faunal composition includes commonly occurring species such as Indian palm squirrel, mongoose, hare, field rodents, and reptiles like lizards and non-venomous snakes, while avifauna is represented by typical bird species including crow, myna, sparrow, pigeon, bulbul, and koel. No rare, endangered, or Schedule-I species have been reported in the immediate study area. Although Raigad district falls under the ecologically significant Western Ghats region with rich biodiversity, the project site and its surroundings do not exhibit any ecologically sensitive features such as wildlife sanctuaries, national parks, or protected

forests in close proximity. Overall, the biological environment of the area is considered to be of low ecological sensitivity with no significant biodiversity constraints.

3.8 Socio-economic Environment

The socio-economic structure of the 10 km study area in Khalapur (District: Raigad) reflects a moderately developed rural–semi-urban setting with a total population of 2,26,643 residing in 49,044 households as per Census 2011. The demographic profile shows a male-dominated population (53.2%) with a sex ratio of 881 females per 1000 males and an average household size of about 4.68 persons. Socially, about 20.11% of the population belongs to Scheduled Castes (9.07%) and Scheduled Tribes (11.04%), indicating a significant presence of socially vulnerable groups. The overall literacy rate of 74.66% is fairly good; however, a noticeable gender gap exists with female literacy (43.41%) lower than male literacy (56.59%), highlighting the need for improved educational access for women. Occupationally, only 33.09% of the population are main workers, while 61.46% are non-workers, suggesting limited employment opportunities and economic dependency in the region. The workforce is primarily engaged in agriculture, allied activities, and small-scale industries. Infrastructure facilities in the area are basic, with the presence of primary schools and anganwadis in most villages, while higher education and advanced healthcare facilities are located in nearby towns like Khopoli and Khalapur. Healthcare infrastructure within the study area is limited, with minimal primary health centers and reliance on nearby urban centers for better medical services. Overall, the region exhibits moderate socio-economic development with scope for improvement in employment generation, healthcare, and higher education facilities.

4.0 Impacts During Construction Phase and Mitigation Measures

4.1 Air Environment

Anticipated Impacts

Impact on air environment will be due to dust generation and will be highly localized and confined to plant boundaries. Particulate emissions may cause occupational health like respiratory problems i.e. allergic asthma and watering of eyes etc.

Mitigation Measures

- Provision of PPE (dust masks, goggles) for onsite workers.
- Screening of construction area at boundary with tin sheets
- Periodic water sprinkling in the construction area.

4.2 Water Environment

Anticipated Impacts

Fresh water required will be supplied through tanker to the project site. About 25 workers from nearby villages will be employed during construction. Additional Sewage generation will be treated in ETP during construction phase.

Mitigation Measures

- Temporary arrangement of clean drinking water will be provided for workers.
- Toilets will be provided and connected to septic tanks discharging to soak pits (during construction phase).

4.3 Noise & Vibration Environment

Anticipated Impacts

Noise and vibrations will be generated in construction phase. As the phase of construction and plant erection will be of temporary nature, noise pollution will be confined to plant boundaries only.

Mitigation Measures

- Adequate PPE (ear muffs, ear plugs) for construction workers.
- Adequate barrier will be provided to prevent noise propagation
- Use construction machinery meeting in EP Act norms for noise.

4.4 Land Environment

Anticipated Impacts

Plant erection involves levelling of land and excavation. Solid waste generated will include demolition rubble, substratum removed during foundation, broken concrete, glass, bricks and scrap iron pieces, insulation, packaging materials, plastic drums etc. Hazardous waste generated includes paint drums, glass wool insulation, etc. Improper waste disposal can lead to unhygienic conditions and hazards to nearby populace.

Mitigation Measures

- Separate area will be earmarked for storage of solid wastes generated while hazardous wastes will be stored in covered area earmarked for the purpose.
- Substratum removed during foundation, broken pieces of concrete, bricks will be given for levelling.
- Wastes like broken glass, plastic drum/ bags / iron scrap etc. will be sold to scrap dealers for recycle.

- Waste paint cans, brushes and filters, glass wool material and packing will be stored separately and disposed of to CHWTSDF facility.

4.5 Ecological & Biological Environment

Anticipated Impacts

There is no wild life sanctuary/national park located within study area. There is considerable agricultural fallow and urban area in study area. No mass nesting was observed within site during site visit, owing construction activity there will be insignificant adverse impact on fauna also.

Mitigation Measures

- Provide barriers around site with water sprinkling to reduce particulate dust generation
- Relatable number of trees will be planted around new plant boundary and on road sides adjoining plot

4.6 Occupational Health & safety

Anticipated Impacts

Health of workers may be affected due to dust and noise and possibility of accidents.

Mitigation Measures

- Adequate provision of PPE (helmets, safety shoes, harness, ear plugs, muffs, dust masks) for construction workers.
- Insurance for construction workers and extending medical facilities to all concerned.

4.7 Socio- Economic Environment

Impacts on socio-economic environment due to proposed project during construction phase are envisaged due to direct and indirect employment which will be beneficial.

Anticipated Impact

There will be temporary employment for about 25 persons over about 8 - 12 months. It will create business opportunities to suppliers of construction material, fabricators, manpower suppliers, civil contractors etc. Local labours will be employed during construction phase.

Mitigation Measures

- Engage local contractors for non-specialized work
- Provide adequate water supply and sanitation for onsite workers.
- Employ local labours and youth for construction work

5.0 Impacts During Operation phase

5.1 Air Environment

• Activities such as raw material handling and resin manufacturing lead to VOC emissions, dust generation, and chemical exposure affecting air quality and worker health.

• Process emissions (formaldehyde, amines) may cause toxic impacts, odor nuisance, and potential long-term health risks.

• Fugitive dust and gaseous pollutants contribute to ambient air pollution, especially in nearby sensitive areas.

• Improper waste and effluent handling can result in secondary pollution like odor, landfill dust, and environmental contamination.

The operational phase of the proposed resin plant will contribute to emissions primarily from two-point sources:

1. Steam Boiler (Hot Water Generator stack)
2. DG Set stack

The key pollutants expected are Particulate Matter (PM), Sulphur Dioxide (SO_2), and Oxides of Nitrogen (NOx). Baseline levels already reflect contributions from existing industries within a 10 km radius, and predicted impacts are assessed by estimating additional increments from the proposed project.

Table 17: Incremental Emission Load due to Point Source Contributing in Existing Baseline Values

S. N.	Sampling Location Code & Name	PM_{10} (ug/m^3)			SO_2 (ug/m^3)			NOx (ug/m^3)		
		BV	IV	RV	BV	IV	RV	BV	IV	RV
1	*A1	40.6	0.12	40.72	22.6	0.10	22.7	36.7	0.17	36.87
2	A2	40.4	0.02	40.42	31.0	0.01	31.01	34.4	0.02	34.42
3	A3	42.9	0.01	42.91	30.7	0.01	30.71	38.6	0.01	38.61
4	A4	40.2	0.0	40.2	28.5	0.00	28.5	36.2	0.00	36.2
5	A5	44.4	0.0	44.4	30.2	0.00	30.2	34.4	0.00	34.4
6	A6	38.5	0.01	38.51	34.8	0.01	34.81	36.0	0.01	36.01
7	A7	44.9	0.01	44.91	34.6	0.01	34.61	32.1	0.01	32.11

8	A8	42.7	-	42.7	28.5	-	28.5	28.4	-	
NAAQS Standards		**100 (24 hourly)**			**80 (24 hourly)**			**80 (24 hourly)**		

The incremental value of the specific pollutant at the particular monitoring station is added to the baseline value of that specific pollutant measured during the monitoring period of the project. The resultant value thus calculated used for predicting the impacts of the proposed project on the air environment in the study area. The resultant value for all the locations is well within the prescribed limit of NAAQS

Mitigation Measures Air Environment

• Installation of closed systems, scrubbers, and proper ventilation to control emissions at source.

• Implementation of leak detection, regular monitoring, and adherence to environmental standards and regulations.

• Use of PPE, proper storage, spill control systems, and good housekeeping practices to protect workers and surroundings.

• Safe waste management practices including covered storage, timely disposal, and odor/dust control measures

5.2 Water Environment

Project activities may lead to contamination of surface and groundwater due to chemical spills and stormwater runoff. Process effluent containing phenol, formaldehyde, VOCs, and suspended solids can degrade water quality. Cooling water discharge and wash water may cause thermal and localized pollution. Improper waste handling can result in leachate generation and long-term environmental impacts.

Mitigation Measures Water Environment

Effluent Treatment Plant (ETP) with Zero Liquid Discharge will be implemented to treat wastewater. Bunding, covered storage, and spill control systems will prevent accidental contamination. Water recycling, sedimentation tanks, and closed-loop cooling will reduce discharge. Proper drainage, lined landfill, regular monitoring, and staff training will ensure compliance and safety.

5.3 Land Environment

- Spill and leak during transport, handling, storage activity of chemicals
- Spill of oil and greases during maintenance of equipment, machineries and vehicles
- Improper storage/dumping of hazardous wastes, resulting in leachate contaminating the soil

Mitigation Measures

- Residues shall be disposed to CHWTSDF facility
- Production, maintenance area and warehouses for storage of raw materials, finished products and hazardous wastes will be provided with impervious flooring
- All bulk storage tanks will be provided with adequate dyke walls to prevent spreading of spill or leaked chemicals causing contamination of soil.

5.4 Green Belt Development Plan

25.892% of total land availability are reserved for greenbelt development plan.

Total Project Site Area = 37760.0 sq. m

25.892% Greenbelt Area of the total available area = 9776.828 sq. m = 0.98 Ha.

No. of Saplings to be planted Per Hectare in Greenbelt = 2500 Nos.

Total plant should be planted as per MoEF&CC recommendation

Total No. of Saplings to be planted in Greenbelt = 2450 Nos.

Total no. of saplings planted till date = 962 Nos.

No. of Saplings to be planted in Greenbelt Area = 2450 – 962 = 1488 Nos.

5.5 Solid and Hazardous and Non-Hazardous Waste Generation and Management

The details of solid and other waste generation are given below in **Table 18**.

Table 18: Hazardous Waste Management

S. N.	Type/Name of Hazardous waste	Specific Source of generation (Name of the Activity, Product etc.)	Category and Schedule as per HW Rules.	Quantity (MT/Annum)			Management of HW
				Existing	Proposed	Total	
1.	Chemical sludge from wastewater treatment	ETP	35.3	24	5	29	CHWTSDF/Reprocessing/recycle
2.	Waste or residues (not made with vegetable or animal materials)	Process	23.1	24	6	30	CHWTSDF/Reprocessing/recycle
3.	Used or spent oil	Transformer and gearbox	5.1	0.504 L/A	0.096 L/A	0.600 L/A	Sale to authorized party/ CHWTSDF
4.	Contaminated cotton rags or other cleaning	Cleaning of equipment	33.2	0.18	0.36	0.24	CHWTSDF

	material						
5	Conc. or evaporation residue	ATFD dry solids	37.3	6.0	1	7.0	CHWTSDF/Reprocessing/recycle
6	Spent sand	Sand testing	-	18	10	28.0	CHWTSDF/Sale to authorized recycler
7	Empty barrels/containers/liners contaminated with hazardous chemical/waste	Raw material drums	33.1	2400 Nos./Annum	2400 Nos./Annum	4800 Nos./Annum	Sale to authorized party / CHWTSDF

Table 19: Non-Hazardous Waste Management

S. N.	Description	Existing Quantity (MT/annum)	Proposal Quantity (MT/annum)	Total Quantity (MT/annum)	Method of Disposal
1	Wooden pallets	42	60	102	Sale to authorized Party
2	Plastic /HDPE liners, bags				Sale to authorized Party
3	Paper waste				Sale to authorized Party
4	Briquettes ash (If briquette will be used as a fuel)	672.00	11.2	683.20	Sale to brick manufacturers
5	Coal ash (If coal will be used as a fuel)	231.84	46.37	278.21	Sale to brick manufacturers
6	Glass, Scrap Metal/Steel & Iron, other miscellaneous waste nonhazardous	42	20	62	Sale to authorized Party

Fuel consumption details for the proposed project are given in **Table 20.** The details of existing and proposed Stacks are given in **Table 21**.

Table 20: Fuel requirement

Fuel Requirement	Existing Quantity	Proposed Quantity	Total Quantity
Diesel	136 lit./Hr.	0	136 lit./Hr.

Note: DG sets are for emergency/back up power.

Table 21: Existing and Proposed Stacks

Stack	Existing	Proposed	Total

Steam Boiler (7 TPH & 5 TPH)	22 m: 1 No.	30 m: 1 No.	30 m: 1 No.
DG Set (2 x 320 KVA)	Stack 1 = 11 m (Building 7.5 m + 3.5 m) Stack 2 = 11 m (Building 7.5 m + 3.5 m)	Nil	11 m: 1 No. 11 m: 1 No.
DG Set (1 x 40 KVA)	Stack 3 = 6.3 m (Building 5 m + 1.3 m)	Nil	6.3 m: 1 No.
Process Vent	12.0 m: 2 No.	Nil	12.0 m: 2 No.
Process Vent & Point Exhaust	NIL	12.0 m: 1 No.	12.0 m: 1 No.

5.6 Environment Management Plan

Details of environment management plan is given in **Table 22.**

Table 22: EMP Budget

S. N.	Details	Capital Cost (In Lakh)	Recurring Cost (In Lakh/Annum)
1	Air Pollution Control Facility	150.0	15.0
2	Rain Water Harvesting System	10.0	3.0
3	Water Pollution Control	90.0	5.0
4	Noise Pollution Control	10.0	2.0
5	Solid Hazardous Waste Management	50.0	10.0
6	Environment Monitoring and Management	10.0	2.34
7	Occupational Health	10.0	4.0
8	Greenbelt Development	50.0	15.0
9	Safety Management	10.0	2.0
10	Renewable Energy	20.0	2.0
	Total	**410.0**	**60.34**
	Total Amount (Capital Cost & Recurring Cost)	**Rs. 470.34 Lakh**	
	Total Amount (Capital Cost & Recurring Cost)	**Rs. 4.70 Crore**	

5.7 Corporate Environment Responsibility

Corporate Environmental Responsibility (CER) activities will be planned as per the demands/issues raise in the proposed public hearing of the project. Project proponent will be planned the CER activities to meet the raise requirements of the public during the public hearing. M/s. Gargi Huttenes Albertus Pvt. Ltd. is already implementing CER activities in the surrounding areas.

6.0 Conclusion

As discussed, it is safe to say that the project is not likely to cause any significant impact on the ecology of the area, as adequate preventive measures will be adopted to maintain the various

pollutants within permissible limits. Greenbelt development around the area will also be taken up as an effective pollution mitigative technique, as well as to control the pollutants released from the premises of the project area

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