

# **PROJECT FEASIBILITY** **REPORT**

*FOR OBTAINING*

**PRIOR ENVIRONMENT CLEARANCE**

*For*

**PROPOSED CHEMICAL (POLYURETHANE  
FOAM) MANUFACTURING UNIT**

*From*

**M/s. RADHEY FOAM PVT. LTD.**

***LOCATED AT:***

Block No. 176, Vill: Kadodara, Tal: Palsana, Dis. Surat, State: Gujarat.

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## 1. EXECUTIVE SUMMARY

**M/s. Radhey Foam Pvt. Ltd.** has proposed to manufacture the product **Polyurethane Foam** at Block No. 176, Vill. Kadodara, Tal: Palsana, Dis. Surat, State: Gujarat.

Basically, the proposed location is not falling in GIDC & unit has proposed manufacturing of synthetic organic chemical activity. Distance of interstate boundary is **72.84 Km** from project site. Therefore, project falls under **category A** of **schedule 5(f)**, as per the EIA Notification, September 2006. Therefore, it requires prior Environment Clearance.

There is no forest/wild life sanctuary/eco sensitive area present within 10 Km area from the project site.

The proposed unit will be developed in an industrial park. The land is already Non-Agriculture. The Proposed project activity will be developed as per plan lay out shown in **Annexure – 2** of EC Application in industrial park.

The Proposed project activity will be carried out in existing Industrial shed. No additional construction activity will carry out.

For, Electric power requirement: Unit will apply for electric connection of 50 KVA to DGVCL. One D. G Set of capacity 250 KVA will be installed which will be used in case of power failure.

For proposed activity, water required for domestic & industrial purpose will be sourced from Bore well. Domestic effluent will be disposed in to Septic tank/Soak pit system. No Industrial effluent will be generated from process.

No solid hazardous waste will be generated from manufacturing process. Hazardous waste generated from the other industrial activity will be stored in a separate hazardous waste storage area and then it will be disposed by selling to register re-cyclers/re-refiners/reused.

Proper safety measures will be undertaken during storage, handling and use of hazardous substance. Fire hydrants, Hose reel & Portable Fire Extinguishers will be provided at key location.

Total area of project site is **11,100.0 m<sup>2</sup>**. The proposed green belt area is **4415 m<sup>2</sup>**.

During operation phase 35 people (30 men + 5 women) will be required.

## **2. INTRODUCTION OF PROJECT / BACKGROUND INFORMATION**

### **2.1 IDENTIFICATION OF PROJECT AND PROJECT PROPONENT**

Unit is located in Village Kadodara. The Kadodara is a Village in Palsana Taluka in Surat District of Gujarat State, India. It is located 13.40 KM towards East from District head quarters Surat, 11 KM from Kamrej & 230 KM from State capital Gandhinagar.

List of product to be manufactured is as under;

#### **LIST OF PRODUCT**

<b>Sr. No.</b>	<b>Name of Product</b>	<b>Quantity (MT/Month)</b>
1.	Polyurethane Foam	300

### **PROJECT PROPONENT**

M/s. Radhey Foam Pvt. Ltd. is a Private Limited Firm.

Mr. Kishorbhai Shanghani is one of the Directors of the company.

### **2.2 NATURE OF THE PROJECT**

**M/s. Radhey Foam Pvt. Ltd.** is a small scale unit. It falls under the category of synthetic organic chemical (Polyurethane Foam) industry.

### **2.3 NEED FOR THE PROJECT**

M/s. Radhey Foam Pvt. Ltd. will be supplying polyurethane foam to several industries. There are numerous uses of polyurethane foams such as packaging, acoustic insulation, filtration, sponges, seals, padding in sports shoes, paint rollers, medical applications, textiles, furniture, Bedding and many other varied applications. Due to increase in both national & local market demand, unit proposes to the production of Polyurethane foam.

### **2.4 EMPLOYMENT GENERATION (DIRECT & INDIRECT) DUE TO THE PROJECT**

Due to the project, employment will be increased. The unit will hire local people from the nearby villages.

People will get direct & indirect employment due to the project activity. Unit will hire 35 employees- (30 men + 5 women)

### 3. PROJECT DESCRIPTION

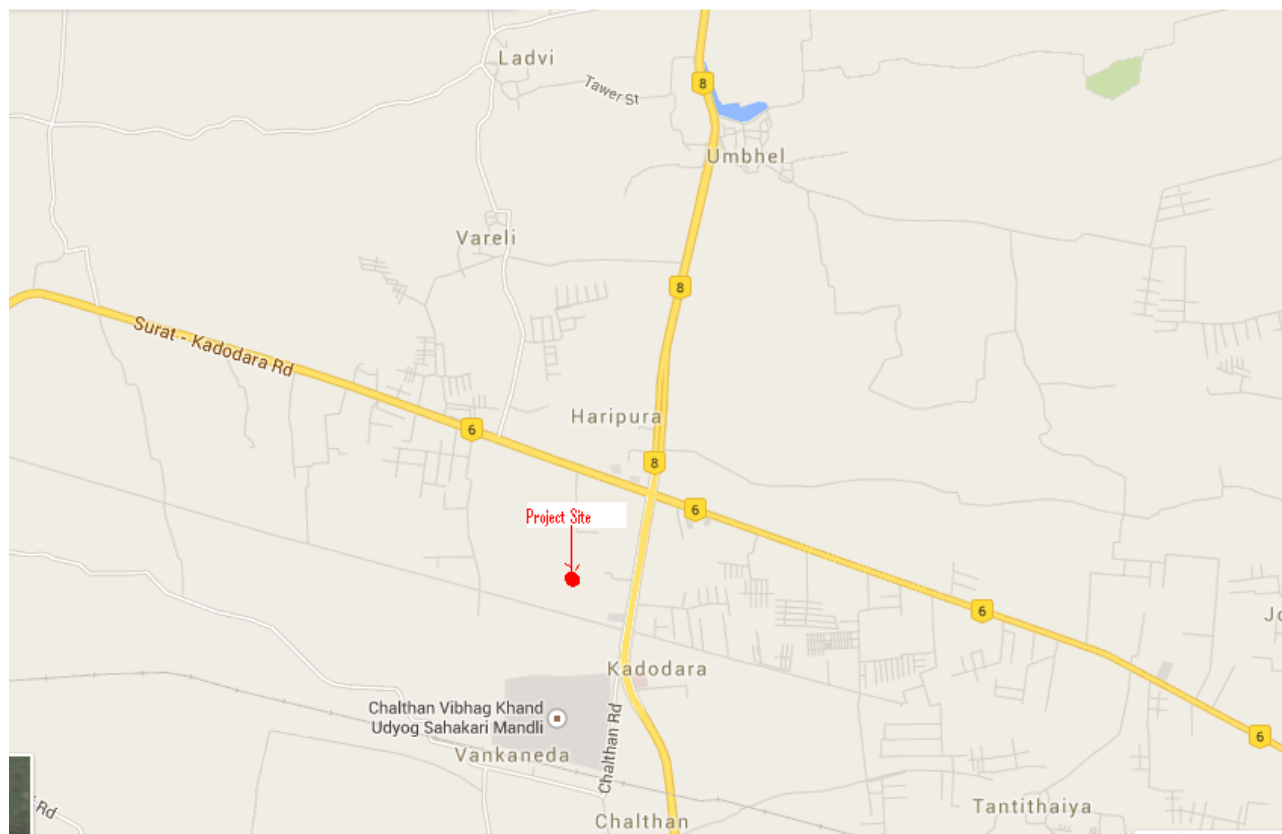
#### 3.1 TYPE OF PROJECT

The unit has proposed to manufacture synthetic organic chemical – Polyurethane foam.

#### 3.2 LOCATION

The site is located at about 21°10'01.97" N latitude and 72°57'31.46"E longitude.

#### LOCATION OF THE PROJECT



#### 3.3 DETAILS OF ALTERNATE SITES

Proposed project is identically located in an industrial park having all adequate infrastructure available. Therefore, no alternate site is considered for the proposed project.

#### 3.4 SIZE / MAGNITUDE OF OPERATION

Proposed project activity will be carried out on Block No. 176, Village: Kadodara, Tal: Palsana, Dist: Surat in RCC G-floor shed.

### 3.5 PROJECT DESCRIPTION WITH PROCESS DETAILS

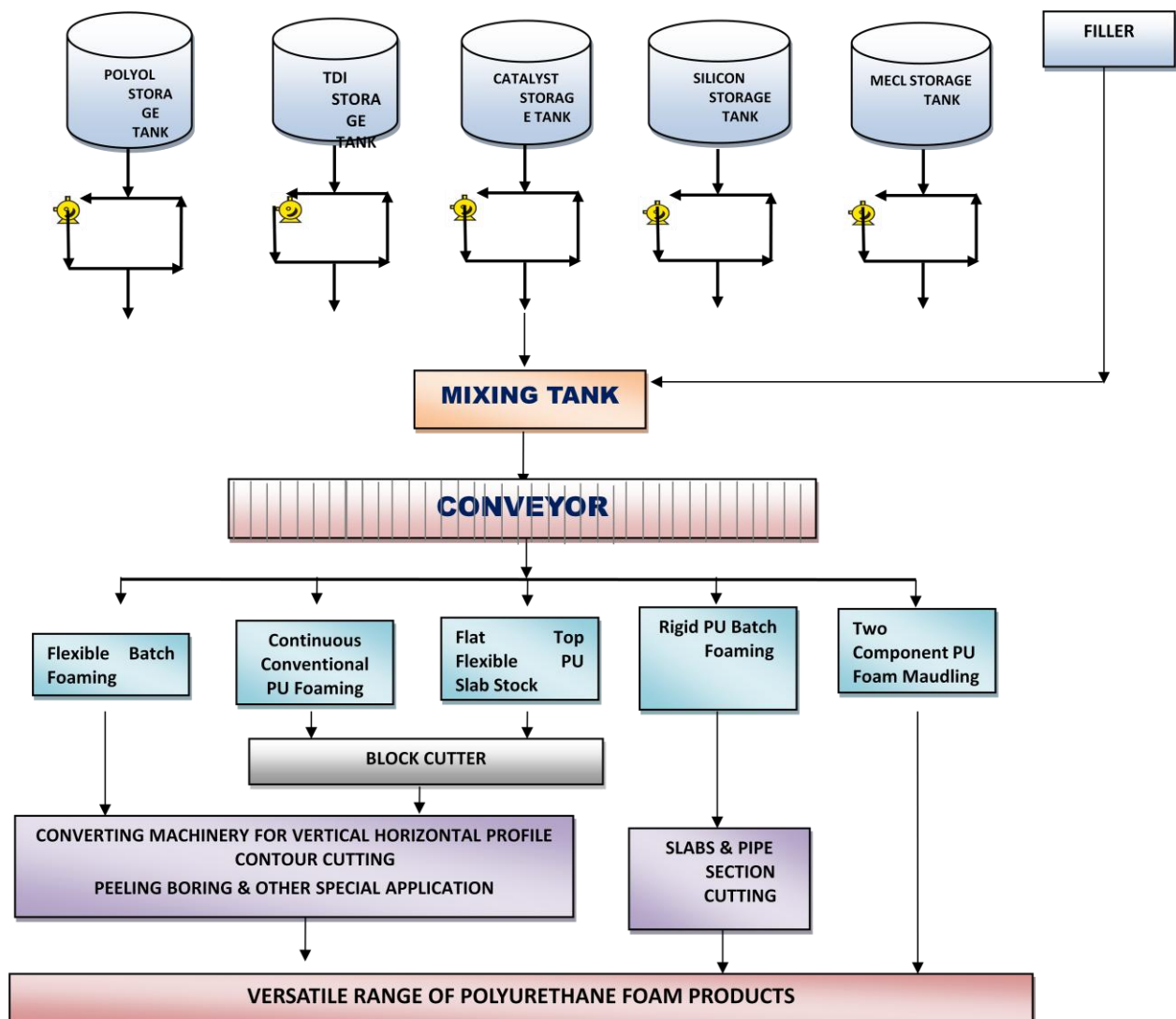
#### Manufacturing Process Description:

The raw materials n-Butyl Alcohol (Polyol), TDI (Toluene Di Isocyanate), Catalysts (Silicon, SO, DMEA/MI), Filler (CaOH) and MECL (Methylene Chloride) are pumped from their own storage tank in required proportions to a common mixing chamber where the materials are mixed at high speed and flows as cream on to a conveyor.

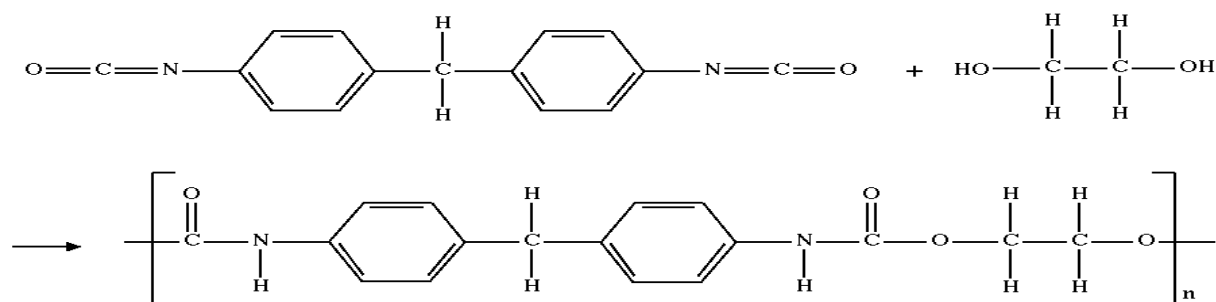
While passing on the conveyor the cream expands to full height to make foam blocks. Continuous foamed blocks are cut into required block sizes by the block cutter and the cut blocks are left for sufficient time in open atmosphere for curing.

The blocks are further cut into sheets of required size by horizontal and/or vertical cutting machines and are packed for dispatch or cut into rolls by peeling machine.

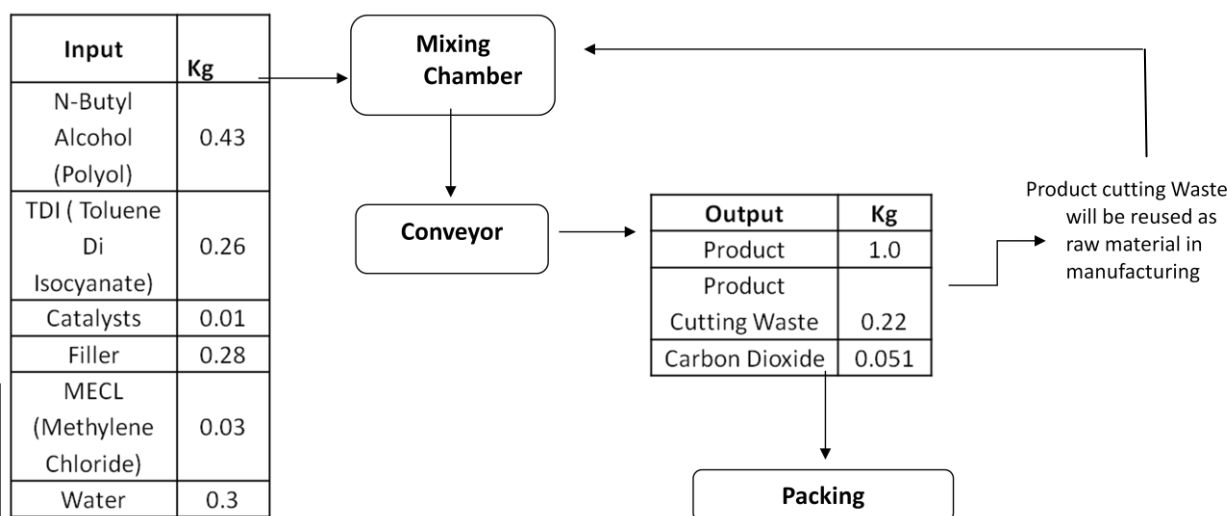
#### Manufacturing Process Flow Diagram



## REACTION CHEMISTRY



## MATERIAL BALANCE



### 3.6 RAW MATERIAL WITH REQUIRED QUANTITY, SOURCE, MARKETING AREA OF FINAL PRODUCTS, MODE OF TRANSPORT OF RAW MATERIAL AND FINISHED PRODUCT

For Product and Raw material with required quantity, please refer **Annexure – 4** of EC application. For source of raw materials, supply of final product, their handling-management & mode of transportation, please refer **Annexure – 7** of EC application.

### 3.7 RESOURCE OPTIMIZATION / RECYCLING AND REUSE

Used oil generates from operation of DG Set will be reused as lubricant for the machinery.

### 3.8 AVAILABILITY OF WATER, ITS SOURCE, ENERGY / POWER REQUIREMENT AND SOURCE

#### Energy / Power Requirement & Its Source

Electric power requirement for proposed project is 50 KVA, which will be procured from Dakshin Gujarat Vidyut Company Ltd. (DGVCL).

One D. G Set of capacity 250 KVA will be installed which will be used in case of power failure.

**Water Availability & Its Source**

**Source of Water:** Bore well (Water Depth: 20 – 25 Mtr.)

**WATER CONSUMPTION**

Sr. No.	Category	Water Consumption (KL/day)
1.	Domestic	11.0
2.	Gardening	12.0
i.	<b>TOTAL</b>	<b>23.0</b>
1.	Process	3.0
2.	Chilling Plant	0.3
ii.	<b>TOTAL</b>	<b>3.3</b>
	<b>GRAND TOTAL (i + ii)</b>	<b>26.3</b>

**3.9 QUANTITY OF WASTES TO BE GENERATED (LIQUID AND SOLID) AND SCHEME FOR THEIR MANAGEMENT / DISPOSAL****(A) Quantity of Liquid Waste to be Generated & Its Management / Disposal:****WASTEWATER GENERATION**

Sr. No.	Category	Water Generation (KL/day)
1.	Domestic	<b>10.0</b>
2.	Gardening	NIL
i.	<b>TOTAL</b>	<b>10.0</b>
1.	Process	NIL
2.	Chilling Plant	NIL
ii.	<b>TOTAL</b>	<b>NIL</b>
	<b>GRAND TOTAL (i + ii)</b>	<b>10.0</b>

**Disposal of Wastewater:**

- Domestic effluent will be disposed in to Septic tank / Soak pit system.
- The quantity of trade effluent generated will be NIL

**(B) Quantity of Solid Waste to be Generated & Its Management / Disposal:**

- ⇒ No Hazardous waste will be generated from the process. Hazardous waste generated from other industrial activity will be stored in a separate hazardous waste storage area and it will be disposed by selling to the register re-cyclers/re-finer/reused.

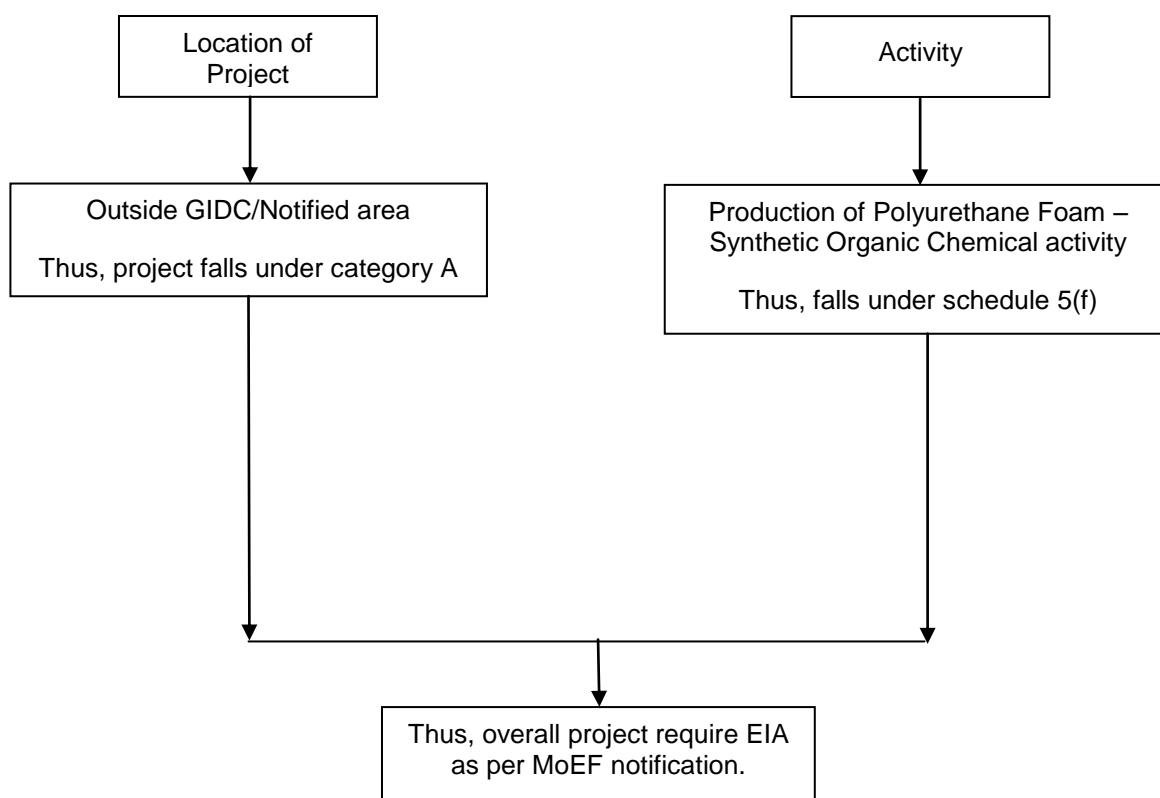


Sr. No.	Type of Waste	Category	Source of Generation	Quantity	Facility
				Total	
01.	Used Oil	5.1	D. G Set	0.045 MT/Year	Collection, Storage, Transportation, Disposal by selling to Registered Re-refiners, approved by GPCB/CPCB or reused as lubricant for machinery within the factory.
02.	Discarded Containers/Bags	33.3	--	60 Nos./Year	Collection, Storage, Transportation, Disposal by selling to Registered recycler approved by GPCB/CPCB
03.	Waste Foam (Product cutting waste)	--	Process	--	Collection & reuse again in process
04.	Carbon Waste	35.3	APCM	2 Kg/Month	Collection, Storage, Transportation, Disposal by selling to Registered recycler approved by GPCB/CPCB

⇒ The municipal solid wastes generated during operation phase will be disposed to bin of Industrial park.

### 3.10 SCHEMATIC REPRESENTATIONS OF THE FEASIBILITY DRAWING WHICH GIVE INFORMATION OF EIA PURPOSE

#### SCHEMATIC REPRESENTATIONS OF PROJECT



## 4. SITE ANALYSIS

### 4.1 CONNECTIVITY

- ⇒ The project site is well connected with all infrastructures like National Highway, Railway, Airport, telephone, internet, fax, post, etc.
- ⇒ Nearest town Kadodara is located 0.54 Km in N direction, Kamrej is located 11.0 Km in N direction from the project site.
- ⇒ Nearest city, district headquarters Surat is located 13.40 Km in W direction from the project site.
- ⇒ National Highway No. 8 is located 0.32 Km in E direction & National Highway No. 6 is located 0.58 Km in N direction from the project site.
- ⇒ Nearest railway station Udhna is located 10.46 km in W direction & Bardoli railway station is located 15.68 in SE Direction from the project site.
- ⇒ Nearest airport Surat is located 23 km in SW direction from the project site.

### 4.2 LAND FORM, LAND USE AND LAND OWNERSHIP

The Proposed project activity will be carried out in existing Industrial shed. No additional construction activity will carry out. The proposed project will not cause any permanent or temporary change to land use.

#### LAND AREA BIFURCATION

Sr. No.	Title		Area (m²)
GROUND FLOOR			
1.	Finished product section (Cutting, Packing & Storage)		932.4
2.	Raw Material Storage Area		337.0
3.	D. G Set		5.0
4.	Hazardous Waste Storage Area		10.0
5.	Office		30.0
6.	Green area belt	Within premises	4415.0
7.	Parking Area		97.5
8.	Open Space		2698.1
9.	Product Curing Area		932.0
10.	Process Area		189.0
11.	Chilling Plant		4.0
12.	Road area within premises		1450
	TOTAL AREA		11,100.0

### 4.3 TOPOGRAPHY

The project area is plain and flat surface with elevation 21 m above MSL. However, in the NE part, the elevation is in the range of 21 – 24 m above MSL & in the SW part, the elevation is in the range of 18 – 25 m above MSL. The general slope of the area is from

NE to SW. In the buffer zone towards NE, E & SE, the elevation rises to 24 m and above MSL & towards S, SW & W the elevation descend to 18 m above MSL.

#### **4.4 EXISTING LAND USE PATTERN, SHORTEST DISTANCE FROM THE PERIPHERY OF THE PROJECT TO PERIPHERY OF THE FOREST, NATIONAL PARK, WILD LIFE SANCTUARY, ECO SENSITIVE AREA, WATER BODIES (DISTANCE FROM THE HFL OF THE RIVER), CRZ**

The land is non agriculture. The project site is located in an industrial park. There shall be no forest, wild life sanctuary, eco sensitive area within 10 km from the project site. The details of water bodies and nearest park are mentioned below:

- Tapi River is 12.81 Km in N direction.
- Mithi Khadi is 1Km in N direction
- Arabian Sea is 29.17 Km in WSW direction.
- Vansda National Park is 79.82 Km in SE direction.
- Purna Wildlife Sanctuary is 82.22 Km in SE direction.
- Dandi Eco-Sensitive Zone is 36.85 Km in SW Direction.
- Canal: 4.73 Km in N direction from the project site.

#### **4.5 SOIL CLASSIFICATION**

Soil in the study area is primarily black & Silty clay in nature.

#### **4.6 SOCIAL INFRASTRUCTURE AVAILABLE**

The proposed project is located in an industrial park. Industrial Park authority will provide power supply, water supply, pucca road, telephone & other communication network & drainage network in the area.

Skilled & unskilled manpower are available within area. Ambulance and emergency fire & medical service available round the clock.

## 5. PLANING BRIEF

### 5.1 PLANNING CONCEPT

The unit has proposed to manufacture Polyurethane Foam. Proposed project activity will be carried out at B. No. 176, Village: Kadodara, Tal: Palsana, Dist: Surat, Gujarat. The Proposed project activity will be carried out in existing Industrial shed. No additional construction activity will carry out.

All the basic facilities like tap water, sanitation & drinking water, canteen & First aid box will be provided within premises.

The project site is well connected with the road, railway and airport. Finished products and raw materials will be transported through road. There is no requirement for the development of other road or railway.

### 5.2 POPULATION PROJECTION

During operation phase 35 people-Direct (30 men + 5 women), 35 employees

### 5.3 LAND USE PLANNING

The breakup of the land area is mentioned in the below table:

#### LAND AREA BIFURCATION

Sr. No.	Title		Area (m <sup>2</sup> )
GROUND FLOOR			
1.	Finished product section (Cutting, Packing & Storage)		932.4
2.	Raw Material Storage Area		337.0
3.	D. G Set		5.0
4.	Hazardous Waste Storage Area		10.0
5.	Office		30.0
6.	Green area	belt Within premises	4415.0
7.	Parking Area		97.5
8.	Open Space		2698.1
9.	Product Curing Area		932.0
10.	Process Area		189.0
11.	Chilling Plant		4.0
12.	Road area within premises		1450
	TOTAL AREA		11,100.0

#### **5.4 ASSESSMENT OF INFRASTRUCTURE DEMAND (PHYSICAL & SOCIAL)**

The project is located in an industrial Park. Industrial park Authority will provide power supply, water supply, pucca road, telephone & other communication network & drainage network in the area.

Skilled & unskilled manpower are available within area. Ambulance and emergency fire & medical service available round the clock.

Local people will be hired for new products and they will be trained within unit. Thus, no social infrastructure will require.

#### **5.5 AMENITIES / FACILITIES**

All the basic facilities like tap water, sanitation & drinking water, canteen will be provided within premises.

First aid box, free medicines & doctor service (on call basis) will be provided.

Adequate PPE's will be provided to all workers.

## 6. PROPOSED INFRASTRUCTURE

1.	Industrial Area	Total Area – <b>11,100 m<sup>2</sup></b>
2.	Residential Area	Residential area is located 700 m in NE direction.
3.	Green Belt	Proposed – <b>4415.0 m<sup>2</sup></b>
4.	Social Infrastructure	Social infrastructure available within 10-15 km from project site.
5.	Connectivity	National Highway No. 8 is located <b>0.32 Km</b> in E direction & National Highway No. 6 is located <b>0.58 Km</b> in N direction. Nearest railway station – Udhna railway station is located <b>10.46 Km</b> in W direction & Bardoli railway station is located <b>15.68 Km</b> in SE Direction. Nearest Airport – Surat Airport <b>23.0 Km</b> in SW direction.
6.	Drinking Water Management	Source of water for domestic & industrial purpose is from Bore Well.
7.	Sewerage System	Domestic effluent will be disposed in to existing Septic tank / Soak pit system.  No Industrial effluent will be generated/ discharged.
8.	Industrial Waste Management	<b>Discarded Containers/Bags</b> – Collection, Storage, Decontamination and Disposal by selling to registered re-cyclers approved by GPCB/CPCB <b>Used Oil</b> – Collection, Storage, Transportation, Disposal by selling to Registered Re-refiners approved by GPCB/CPCB. <b>Waste Foam</b> (Product cutting waste) – Collection & Reuse in Manufacturing process again.
9.	Solid Waste Management	MSW disposed to bin of nearby Palsana Nagarpalika.
10.	Power Requirement & Supply / Source	<b>Source:</b> Dakshin Gujarat Vidyut Company Ltd. <b>Proposed power requirement: 50 KVA</b>

## 7. REHABILITATION AND RESETTLEMENT (R & R) PLAN

The project is located within an Industrial park therefore no Rehabilitation & Resettlement (R & R) plan is involved in proposed project.

## 8. PROJECT SCHEDULE & COST ESTIMATES

### 8.1 LIKELY DATE TO START OF CONSTRUCTION AND LIKELY DATE OF COMPLETION

Production of proposed product will be started after getting Environment Clearance (SEAC) and CTE/CC&A from the GPCB.

### 8.2 PROJECT COST ESTIMATION

Estimated cost for the proposed project is as under;

Details	Description	Approximate Recurring Cost Per Annum (Rs. in Lacs)	Approximate Capital Cost (Rs. in Lacs)
Land	Plot is owned by the project proponent	--	25.00
Building	RCC G floor	1.00	42.00
Plant & Machinery	New machineries required for the proposed project.	2.00	122.00
Green Belt Development	Proposed green belt area will be developed	0.50	3.00
CSR Activity	Donate computer to nearby village school	--	3.00
<b>TOTAL</b>	<b>-</b>	<b>3.50</b>	<b>195.00</b>

## 9. ANALYSIS OF PROPOSAL

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### 9.1 FINANCIAL AND SOCIAL BENEFITS WITH SPECIAL EMPHASIS ON THE BENEFIT TO THE LOCAL PEOPLE INCLUDING TRIBAL POPULATION, IF ANY, IN THE AREA

Project is located in an industrial park. Therefore, No R & R plan involved in proposed project.

Due to proposed project it is expected that employment will increase for people who reside nearby project area. Approx. 30 men & 5 women will get employment directly.

Due to increase in raw material and product transportation activity, indirect employment will generate.

As local people will get job, quality of living will be increase.

Due to green belt development, aesthetic value of local environment will improve.