# PRE-FEASIBILITY REPORT

## For

# LEATHER PROCESSING UNIT (WET BLUE TO FINISH)

## At

**Plot No – 2319, 2320, 2321, 2322, 2342, 2344, 2345**
**M.I.E Part (B), Bahadurgarh, Jhajjar, Haryana**

**For: M/S Unique Enterprises**
**B-1/140, Paschim Vihar, New Delhi- 110063**

**ENVIRONMENTAL CONSULTANT**

M/s Perfact Enviro Solutions Pvt. Ltd.
(NABET Registered wide list of accredited consultants organizations/ Rev 21A/ 19th August, 2014 at S.No-110)
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# CONTENT





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# CHAPTER-1: INTRODUCTION

**Introduction of the Project Background Information**

The Process of making leather from the skins of animals, which do not decompose easily, by permanently altering the protein structure by using an acidic chemical "Tannin", is called Tanning. Leather requirement is increasing gradually and different variety of the finished leather is in demand. The unit will process the leather from wet blue to finish material. Wet Blue Skins are smaller in size, and lighter in weight around 600 g to 1 kg. After various processing the semi-finished leather is converted into finished leather (wet blue to finish).

Proposed Leather Processing Unit (Wet blue to finish) is proposed at Plot No – 2345, 2344, 2342, 2319, 2320, 2321, 2322, M.I.E Part (B), Bahadurgarh Jhajjar, Haryana and shall be developed by M/s Unique Enterprises. The unit will process 1000 skins/day. As per EIA Notification, 2006 (as project is located in notified Industrial Area) the project falls in and 'B' category of 4 (f).

The EC application was submitted in MoEF on 04-01-2010 & subsequently the Terms of Reference (TOR) were granted vide letter no. J-11011/39/2010- IA-II (I) dated 22-06-2010 and the EIA report along-with TOR compliance was submitted in MoEF on 06-02-2012. Then case was appraised in EAC meeting held on 24-09-2012 in MOEF and as per the minutes of EAC meeting held on 24-09-2012 the reply of queries raised was submitted on 18-02-2013. As per the minutes the committee also decided that MoEF shall seek clarification from Industries, Department, Govt. of Haryana whether the land under consideration comes under the limits of notified industrial area & in response to it, reply from Director of Industries & commerce department, Haryana was received at MoEF vide Memo no. IE/HSIIDC/HUDA/Rep/11049-A dated 24-10-2013 stating that M/s Unique Enterprises lies in the industrial area which is approved by HUDA & notified by Urban Estate Department, Govt. of Haryana on 06-01-1977. Then the letter was received from MoEF vide F. No. J-11011/39/2010-IA II (I), dated 3rd June, 2014, for submission of Environmental Clearance obtained for the Industrial area in which our proposed Leather processing unit lies for seeking exemption from public hearing. But the above-said industrial area is quite old & no environmental clearance was applicable on it, at the time it was declared as industrial area, so we will go ahead with conducting of public hearing for our proposed project of Leather Processing Unit, but the validity of the TOR granted for proposed project dated 22-06-2010 has been expired. The request letter for revalidation of the TOR has already been submitted in MoEF on 19-06-14. Thus, we are hereby again submitting the Environmental Clearance application for revalidation of the TOR so that we can get the public hearing conducted accordingly.



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## About use of Tannery

The leather industry occupies a prominent place in the Indian economy by virtue of its enormous potential for employment, growth and exports. At present India accounts for very low share in the global leather markets. To exploit the full potential of the industry Government launched the Leather and Technology Mission aimed at meeting the twin objectives of restructuring and streamlining the industry to make it internationally competitive and also protecting the interest of small scale and tiny sectors. Having the largest cattle population ( in any country in the world) , availability of cheap and abundant manpower combined with Government's initiatives , modernization of equipments and techniques and increasing investments, India's leather industry is sure to grow much faster and will earn valuable foreign exchange for the country. The leather industry covers different segments namely tanning and finishing, footwear and footwear components, leather garments and leather goods.

## Purpose of Report

The present report pertains to assess the impact of the development of leather finishing unit from wet blue activity on the surrounding environment.

The tanning industry is the cause of considerable environmental pollution. The industry is associated with noxious smell arising from its raw materials, the medieval methods of processing and the solid and liquid wastes it discharges. The tanning process consumes large quantities of water. The wet bue to finish tanning process consists of two stages.

1. Wet Blue to Dye Crust (Post Tanning Process)
2. Dye Crust to Finish (Post Tanning Process)

The report describes Post-tanning process as the industry will process only wet blue to finish which comes under Post-tanning process. In the current study the wastewater would be generated mainly by process & wash. Most of the used water is finally discharged as wastewater carrying high suspended solids, dissolved solids, Bio-chemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD). The wastewater has a deep colour and bad smell.

In compliance to the prevailing statutes, an environment clearance is necessary on expansion/modification of production capacities/processes. Besides, fulfillment of statutory requirement, the company is well aware about its responsibility and commitment towards environment protection.



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**Profile of promoter**

Unique Enterprises is a new company in the field of Leather processing with vision of production of high quality leather. Project proponent wants to produce finished product in environmentally friendly manner

**Need of the Project**

Leather requirement is increasing gradually and different variety of the finished leather is in demand. The unit will process 1000 skins/day.

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# CHAPTER 2: PROJECT DESCRIPTION

## Site Location

The site is located at Plot No – 2319, 2320, 2321, 2322, 2342, 2344, 2345 M.I.E Part (B), Bahadurgarh Jhajjar, Haryana Longitude – 76°56'58.36"E, Latitude – 28°41'6.42"N. Bahadurgarh is well connected through rail and road. **Figure 2.1** show the location of the site.

**Figure 2.1- Location Map**


## Land Area Details

| | |
|---|---|
| Land Area | 1598.675 $m^2$ |
| Total Built up Area | 682.99 $m^2$ |
| Green Area (15%) | 239.80 $m^2$ |
| Green Belt | 3-6 m wide |
| Height of building | 10 m |

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| | |
|---|---|
| Workers | 20 nos. |
| Working shift | 12 hrs |
| Capacity of Unit | 1000 Skins/day |
| Finished Product | Finished leather |

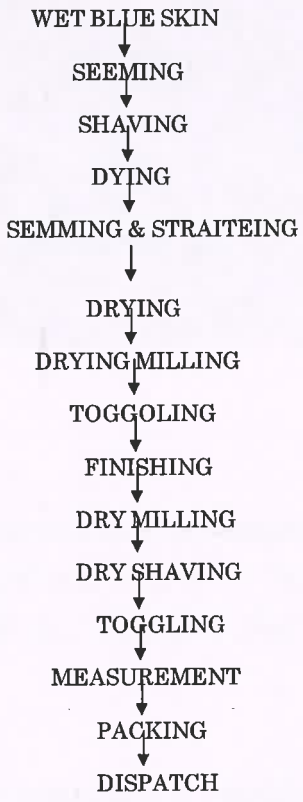
## Layout Plan is attached as Annexure-I

## Project Description with Process Details

**Wet Blue to Finished Leather**

The various operations of processing of semi-finished leather into finished leather (wet blue to finish) are shown in the following Process Flow Diagram:

**THE PROCESS FLOW CHART**



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**A) Skins**

Skins of goats and sheeps are called 'Blue skins'. Goat and sheep skins are by-product of the meat industry. Wet Blue Skins are smaller in size, and lighter in weight around 400g to 600g.

**B) Seeming**

Wet blue skin by the time they arrive at the unit will be semi dry in nature, they are first sun dried to loose more/further water content.

**C) Shaving**

Seemed skins are trimmed to remove long shanks and other unwanted areas. Shaving is done to even the thickness of the skin.

**D) Dyeing**

The skins are put in the vat for dyeing. The vats are heated through thermic fluid boiler.

**E) Seeming & Straightening**

After Dyeing skin becomes hard. The softening of the skin is again done by seeming and straightening.

**F) Drying**

Skin is now dried by air drying or hooking.

**G) Dry Milling**

Dry milling is done for softening the skin. It is done by putting the skin in a rotating drum with rubber balls

**H) Toggling**

Heating of skin is done on toggling board with the help of toggling clips.

**I) Finishing**

Finishing of skin is done in auto spray machine.

**J) Dry Milling**

Dry milling is again done after finishing softening the skin.

**K) Dry Shaving & Toggling**

Dry shaving & Toggling is again done to make the skin even & straight.

Skin is packed after measurement of skin.

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**Plant Capacity**

As per the Environment Impact Assessment Notification 2006 this project is defined in 4(f) under the broad category of Manufacturing/Fabrication. The unit will process 1000 skins/day.

**Raw Materials Required with daily consumption**

| Raw materials | Suppliers | Quantity |
|---|---|---|
| Sheep skin /Goat Skin (wet blue) | M/s Exclusive Leathers<br>M/s K B Leathers<br>M/s A M International | 1000 kg~600 Kg/day |
| Fat Liquor | M/s Tantex Chemizonia (P) Ltd.<br>M/s Paras Chemicals<br>M/s Haryana Leather Chemicals Ltd. | 120 kg/day |
| Dye stuff | M/s Tantex Chemizonia (P) Ltd.<br>M/s Paras Chemicals<br>M/s Haryana Leather Chemicals Ltd. | 18 kg/day |
| Syntana | M/s Tantex Chemizonia (P) Ltd.<br>M/s Paras Chemicals<br>M/s Haryana Leather Chemicals Ltd. | 60 kg/day |
| Pigments | M/s Tantex Chemizonia (P) Ltd.<br>M/s Paras Chemicals<br>M/s Haryana Leather Chemicals Ltd. | 20 kg/day |
| Dye Solutions | M/s Tantex Chemizonia (P) Ltd.<br>M/s Paras Chemicals<br>M/s Haryana Leather Chemicals Ltd. | 5 kg/day |

**Number of Machinery Proposed**

| Machineries | Quantity |
|---|---|
| Wooden Drum for Dyeing | 3 |
| Wooden Drum for Dry Milling | 2 |
| Setting Machine | 1 |
| Slow comb staking (8 X 8') 6 X 5' | 2 |
| Shaving Machine (800 mm) (10' X 10') 5' X 5' | 2 |
| Hydraulic Press (12' X 10') 8' X 6' | 2 |
| Auto Sprayer with Boiler 60' X 12' | 1 |
| Measuring Machine (10' X 6') 8' X4' | 1 |
| Toggling Machine ( 13' X 8') 10' X6' | 2 |
| Thermic Fluid Heater (1 lakh Kilo Calory/day) | 1 |

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**Detail of Products**

**Products**:

Finished Leather 1000 skins per day

**MANPOWER**

The project is based on utilization of skilled manpower. The unit shall be operational for 12 hr. The manpower requirement shall be as per Table given below:

| | **Proposed** |
|---|---|
| **No. of workers** | 20 |
| **Working hours** | 12 hours |

## Water Management

**WATER CONSUMPTION & SOURCE**

The water will be required mainly for process & wash, cooling, gardening and sanitary purpose. Total water requirement has been computed as 28.2 KL as per details below. Fresh water requirement will be 24.9 KLD, the requirement will be met from municipal water supply and treated water.

**Waste water generation**

The waste water generated from the unit will be of two types domestic & industrial. The Domestic Sewage of 0.8 KLD shall be anaerobically treated in a septic tank followed by soak pit. The Industrial Effluent of 24 KLD shall be treated in Effluent Treatment Plant (ETP) of 25 KLD. The treated waste water from the proposed complex will be retreated in R.O. Out of total treated water obtained from R.O., 3.3 KLD of the treated water shall be reused for cooling & gardening & rest reject from R.O. shall be discharged to evaporator. Thus it will be zero discharge industry. The detail of waste water is given below:

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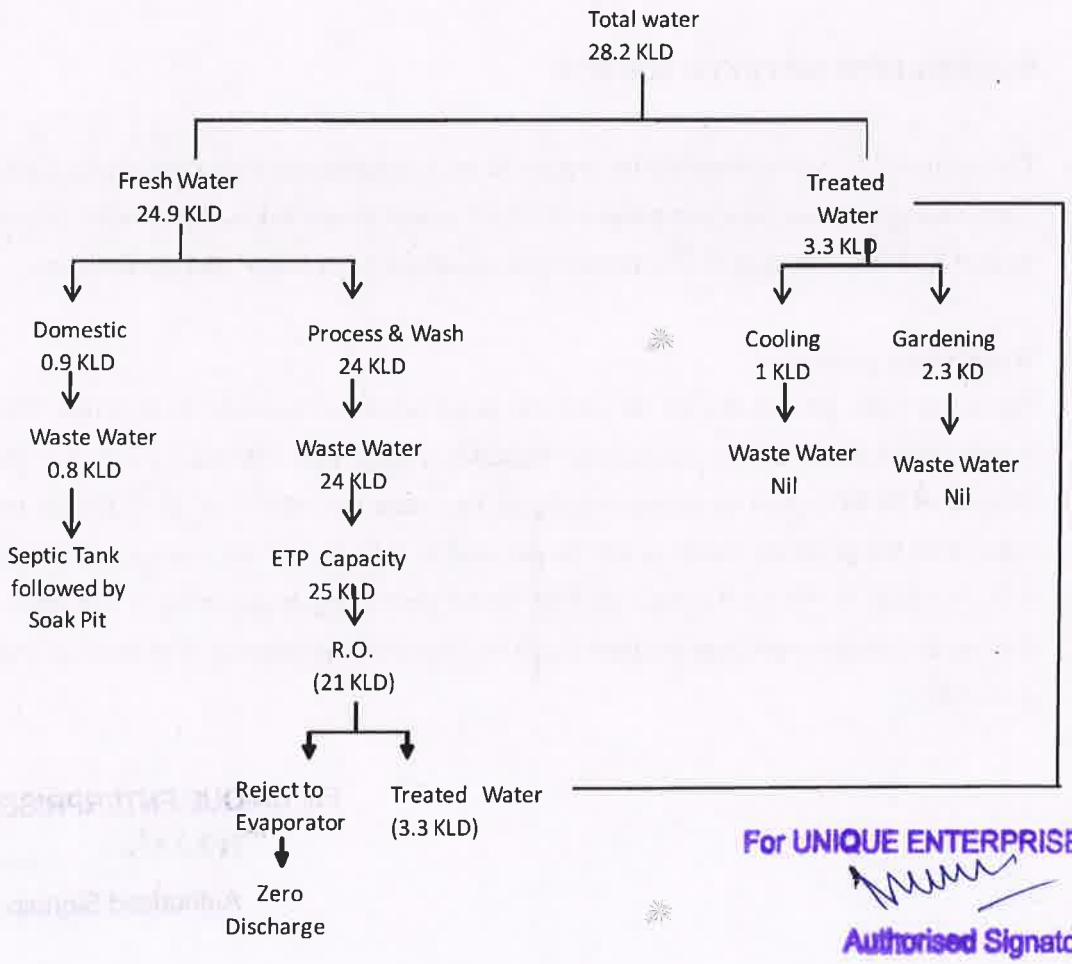
## WATER MANAGEMENT

| DOMESTIC | WATER REQUIREMENT (KLD) | WASTE WATER DISCHARGE (KLD) |
|---|---|---|
| 20 Persons @45 lpcd | 0.9 | 0.8 |
| GARDENING | 2.3 | NIL |
| INDUSTRIAL | | |
| Process &Wash | 24.0 | 24.0 |
| Cooling | 1.0 | NIL |
| Total | 28 .2 KLD | 24.8 KLD Say 25 KLD |

## WATER BALANCE DIAGRAM

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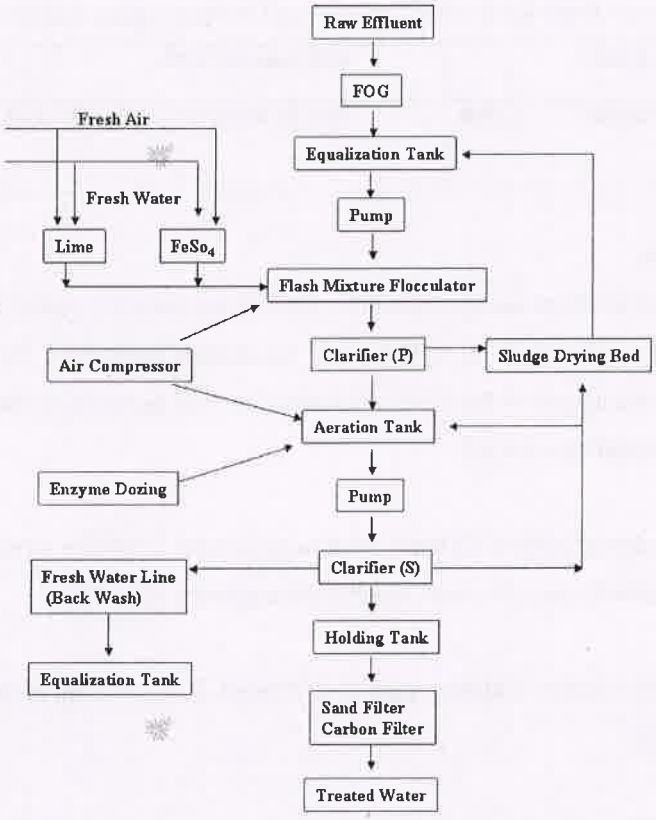
## Flow Diagram of ETP




## Waste Generation and Management

The solid wastes from unit during construction phase will be muck and slurry. During operation phase solid waste will include, Municipal Solid Waste, Process waste, ETP sludge & hazardous waste.

**Municipal solid waste:** Approx 3 kg/day municipal solid waste shall be generated during operation phase

| Municipal solid waste | | | | |
|---|---|---|---|---|
| **Category** | **Type of Waste** | **Color of Bins** | **Disposal Method** | **Total Waste (Kg/day)** |
| **Bio Degradable** | Organic Waste | Green | WILL BE SENT TO MUNICIPAL LAND FILL SITE. | 2 |
| **Non-Biodegradable** | Recyclable Waste | Blue | Authorized Recycler | 1 |
| | Total | | | 3 Kg/day |





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**Process Waste**

The quantification of the waste which can be used as by-products is given below:

| TYPE OF WASTE | DISPOSAL METHOD | TOTAL WASTE |
|---|---|---|
| WASTE FROM PROCESS ( SKIN SCRAP) | WILL BE GIVEN TO SECONDARY USER. | 25 KG/DAY |

**Hazardous Waste**

a) **Used Oil:** Used oil from machineries/D.G. Set will be carefully stored in HDPE drums in isolated covered facility. The used oil will be sold to vendors authorized by Central Pollution Control Board for the treatment of the same. Suitable care will be taken so that spills / leaks of used oil from storage could be avoided.

b) **ETP dried Sludge** of approx 5 kg/day shall be generated. It will be stored to HDPE bags & then it will be sent to nearby hazardous waste landfill site approved by CPCB.

c) **Process sludge** of approx 1 kg/day shall be generated. It will be sent to hazardous waste landfill site approved by CPCB.

## Power Requirement Source & Back-up

| Power Source | **Haryana State Electricity Board** |
|---|---|
| Total Electric Load | 120 KVA |
| Type of The Fuel Used | Low Sulphur Diesel |
| DG Sets | 2 D.G. Sets of 75 KVA |
| DG sets (running hours) | 2-3 hrs./day |

## Air Emissions and Control

The major air pollutants released from the unit are gases like sulfur dioxide, nitrogen oxides released from Thermic fluid Heater of capacity 1 lac kilo calories/hr and $NO_X$, CO, HC and SPM from DG Sets. For mitigation of impacts, stack height of 12 m above ground level shall be provided to Thermic fluid Heater & adequate stack height of 2 m as per CPCB norms will be provided to D.G. Sets.

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**Noise Pollution**

To reduce Ambient Noise level 15 % green area shall be developed. Major source of noise are industrial processes and DG Sets. The D. G. Set will be acoustically enclosed and shall meet the standards as laid down by CPCB. Since most of the industrial units will be housed in secured well-ventilated building, the ambient noise will not be adversely affected.

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# CHAPTER 3: LAND DETAILS

## Land Form & Land Use

At present the proposed project Site is a vacant land. There is no eco-sensitive area within the 10 Km radius of the project site. The topographical map showing 10 km radius is given Annexure II.

## Existing Infrastructure Around the Site

**Routes or facilities used by the public for access:**

- Nearest Railway Station : Bahadurgarh Railway Station – 2.5 Km NW
- Nearest National Highway : NH-10 – 0.5 Km N
- Nearest Airport : Indra Ghandhi International Airport – 20.5 Km SE
- State boundary of Delhi: 2 Km E

## Proposed Infrastructure

### Processing Area

Following sections are proposed in the processing zone:

Chemical Storage tanks, Process quality laboratory, Tannery plant, Thermid Fluid Section, raw material storage shed, Cooling tower, environment infrastructure including ETP etc. shall be provided.

### Green Belt

Native species, Evergreen species in shelter belt and avenue plantation shall be planted.

### Sewerage System

The domestic waste water generated produced shall be disposed off to septic tank via soak Pit. The treated water obtained from R.O. shall be reused for cooling & gardening & reject from R.O. shall be discharged to evaporator. Thus it will be zero discharge complex.

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**Liquid Waste**

ETP unit shall be provided for treatment of liquid waste.

## Rehabilitation and resettlement Plan

The project site is vacant land. Thus, No rehabilitation and resettlement is required.

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# CHAPTER 4: PROJECT SCHEDULE AND COST ESTIMATES

## Likely Date of Start of Construction and Completion

Construction shall be started after getting Environmental Clearance and other relevant approvals. The construction/ installation of the unit will be completed within 12 months.

## Estimated Project Cost

The project cost of existing unit is Rs. 82 lacs.

| Purpose | Cost (in Lakhs) |
|---|---|
| Land Cost | 35 |
| Building Cost | 10 |
| Machinery | 20 |
| Misc/ Raw Material/ Running Cost | 27 |
| **Total Cost** | **82** |

## Economic Viability of the Project

In the project 12% benefit on cost of investment shall be there.

**COST ON EMP**

**CAPITAL EXPENDITURE**

| Sl No | Description | Cost during operation (Rs. In Lakhs/Year) |
|---|---|---|
| 1. | Landscaping | 0.60 |
| 2. | Waste water treatment | 12.3 |
| 3. | Solid waste management | 1.2 |
| 4. | Others | 1.6 |
| | **Total** | **15.7** |

**RECURRING EXPENDITURE**

| Sl No | Description | Cost during Operation (Rs. In Lakhs/Year) |
|---|---|---|
| 1. | Landscaping & Sprinkling | 0.3 |
| 2. | Water Management | 2.4 |
| 3. | Air Management | 0.8 |
| 4. | Solid Waste Management | 0.6 |
| 5. | Environment Monitoring | 1.2 |
| 6. | Misc. | 0.5 |
| | **Total** | **5.8** |



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# CHAPTER 5: PROJECT BENEFITS

- It will provide direct and indirect employment to local People.
- Organized methods for processing unit wet blue to finish shall be used.
- Leather Industry is a large and growing domestic market. India's share in the global leather market is also expected to increase by around 5% in 2027. So there will be economic benefit due to export oriented unit for production.
- Environment Friendly technology shall be used.
- The process waste will act like a by-product and shall be sold to secondary users like leather Board manufactures, brick manufacturer etc.
- Addition of revenue to the state by direct & indirect taxes.
- Proposed tannery unit will be zero liquid discharge.

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# ANNEXURE I

# LAYOUT PLAN

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# LAYOUT PLAN OF PROJECT