PRE FEASIBILITY REPORT

JESONS INDUSTRIES LTD.

April 2017

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1. EXECUTIVE SUMMARY

Group of directors of **M/s. *Jesons Industries Ltd*** is proposed to establish synthetic organic industry at survey No. 63+1, 64/1,64/4,70,71,72,74/11,45 (Phase-II), Village: Mahagaon, Tal. Dist. Palghar, Maharashtra. 43946.10 Sq. Mtr. & Total Built up Area is 21000 Sq. Mtr.

The proposed project activity falls under 5(f) category i.e. Synthetic organic chemicals industry (dyes & dye intermediates; bulk drugs and intermediates excluding drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemicals and chemical intermediates). The project will require Environmental Clearance (EC) from the Expert Appraisal Committee (EAC- Industry2), MoEF, New Delhi as per Environmental Impact Assessment (EIA) Notification, September 14, 2006 as amended thereof. As the project falls under 5f category, Environmental Impact Assessment needs to be carried out for the project.

Client is intend to produce chemicals that will be used as Acrylic polymer, Emulsions, Industrial Synthetic Adhesives and Glues, Thermosetting Acrylic Resins, Polymer of Vinyl Acetate and Vinyl Copolymers, Ethylene Vinyl Acetate Emulsions etc. These product have local as well as foreign demand as per market requirement. The project will run on Zero Effluent Discharge (ZLD) scheme. Generated effluent will be treated in ETP followed by Multi-Effect Evaporator system. Solid waste will be categorized as hazardous & non-hazardous on the basis of its characteristics. Hazardous waste will send to CHWTSDF and non-hazardous to authorized vendor for its disposal.

Proposed project will generate 250 nos. employment to local youth in construction phase and 100 nos. of operational phase. The total cost of the project would be **Rs.50** Crore.

2. IDENTIFICATION OF THE PROJECT / BACKGROUND INFORMATION

i.) *Identification of project & project proponent :*

It is the proposed synthetic organic chemical industry for production of chemicals that will be used as Acrylic polymer, Emulsions, Industrial Synthetic Adhesives and Glues, Thermosetting Acrylic Resins, Polymer of Vinyl Acetate and Vinyl Copolymers, Ethylene Vinyl Acetate Emulsions.

Jesons Industries Ltd. is one of the Largest Acrylic Emulsion Manufacturer in India with growing Exports into high growth markets in East Asia, Africa and Middle East. Mr. Dhiresh Gosalia is one of the director of the company. He has an experience of 15 years in the same field.

ii.) *Brief description & nature of the project:*

The proposed project is setting up of a manufacturing facility for Synthetic Acrylic Polymer Emulsions, Industrial Synthetic Adhesives and glues, Thermosetting acrylic Resins, Vinyl Co-polymers, Water Proofing Compounds and Construction Emulsions, Styrene Acrylic Emulsion, Solvent Base Adhesives & Paper / Board coating emulsions. Details of product are presented in below table

Table 1 :- Product details

Sr. Nos.	Name of Chemical	Quantity in MT/Y
1.	Synthetic Acrylic Polymer Emulsions	**72000**
2.	Industrial Synthetic Adhesives, Glues	**9600**
3.	Thermosetting Acrylic Resins, Ethylene vinyl acetate Emulsions/powder	**12000**
4.	Polymer of Vinyl Acetate	**12000**
5.	Vinyl Copolymers	**12000**
6.	Water proofing compounds and Construction emulsions	**15000**
7.	Synthetic Organic/ Pigments & Preparation there on	**24000**

8.	Paper Chemical	**9000**
9.	Solvent based Adhesive	**6000**
10.	Styrene Polymer Emulsion	**24000**

iii.) *Need for the project and its importance to the country and or region*

Emulsion is a colloidal suspension of a liquid in another liquid primarily oil and water. Polymer emulsions are formulated by emulsifying the required monomer in presence of water and a surfactant. Polymer emulsions employ a wide variety of ingredients in their production, including monomers, co-monomers, initiators, surfactants and non-surfactant stabilizers, among others.

Growing awareness with regard to the adverse effects of VOC emissions, which are present in a majority of solvent based products, have resulted in generating greater demand for emulsion polymers, which are low in VOC content. Major industries that use polymer emulsions include paints & coatings, paper & paper-board and adhesives, with all of them focusing on reducing VOC emissions. Environmental regulations on butadiene is likely to hamper the market growth during the forecast period.

With the automotive and building & construction on the rise, demand for paints & coatings is also expected to witness growth, in turn, fueling the market for low-VOC polymer emulsions used in their production. Other factors instrumental in driving growth include resurgence in the paper & paperboard industry and greater demand for adhesives & carpet backing.

The India polymer emulsion market has been segmented on basis of product type and application. By product type, the market is further segmented into acrylics, polyurethane (PU) dispersions, styrene butadiene (SB) latex, vinyl acetate, and other polymer emulsions. Based on application, the market is classified into adhesives & carpet backing, paper & paperboard coatings, paints & coatings and others.

iv.) *Demand – Supply gap*

India was the largest consumer in the polymer emulsions market in Asia-Pacific after China in 2015 and the country is likely to strengthen its position in Asia-Pacific

during the forecast period. On the whole, the demand for polymer emulsions in the country is estimated to rise at a significant rate during the forecast period.

Asia Pacific accounts for more than 39% of market volume in 2015. China being a largest producer of paints & coatings demand for emulsion polymers on a large scale. Rapid industrializations, favorable government regulations and increase in consumer spending will significantly grow the emulsion polymers market in emerging economies such as China, India and Japan. This market in North America is witnessing a constant growth due to stable marine activities and currency fluctuations as a result of uncertainties and lowering price of oil crude. Counties like Indonesia, Thailand, Malaysia are increasing trade which are supported by government through tax subsidies, regulations and incentives.

v.) Import vs Indigenous Production

Increasing income levels and infrastructure development in India are expected to drive the growth of building materials and related products including water-based adhesives that are categorized into acrylic emulsions and polyvinyl acetate (PVA). The former accounts for 66 percent of the total water-based adhesive market, while the latter contribute the rest. Widely used in the construction, furniture, and packaging industries, water-based adhesives are set to gain demand in the wake of the green building initiatives in India.

Acrylic emulsion manufacturers need to import all the required raw materials, as none is produced in India because it is more economical to import them.

"The Indian paints industry is highly dependent on oil-based products for raw materials," says Sridharan "With the fluctuating prices of crude oil and the shortage of certain raw materials; raw material suppliers have a high bargaining power with the adhesive manufacturers."

With the Indian market being dominated by a few participants, price and the formulation of products are the two key differentiators in the water-based adhesive market. In response, large suppliers are spending more on branding to draw customers by increasing their awareness.

vi.) *Export possibility*

M/s. Jesons Industries Limited is one the Largest Acrylic Emulsion manufacturer in India with growing Exports into high growth markets in East Asia, Africa & Middle East. The company has 60% of export market for its existing product range and as per market survey by the company; these proposed products are having a good exports well as domestic market.

vii.) *Employment Generation (Direct & Indirect) due to the project*

Proposed project will generate 150 nos. of temporally jobs in construction phase & 250 nos.of permanent jobs in operational phase. In addition to this small ancillary business which are directly or indirectly dependent will develop.

3. PROJECT DESCRIPTION

i.) *Type of project*

The proposed project involves manufacturing of "Construction Emulsions, Synthetic Acrylic Polymer Emulsions, Industrial Synthetic Adhesives, Glue & Adhesives" falls under the item no. "5(f) category i.e. Synthetic Organic Chemicals and Category A as per the EIA notification, 2006 and amendment thereof.

ii.) *Location of the project*

Proposed project site is situated in the Mahagaon village of Palghar district of Maharashtra. Mahagaon is 6.5 km away from main city Boisar. Site is well connected to NH-8 (Vapi to Bhyandar). It is around 12 km from the district headquarter Palghar city in South –West direction. The nearest railway station is Boisar 6.5 km away from site. Surrounding area of the proposed industry has mix development. India business capital Mumbai is just 75 km from site Sea shore is 16 km away. The proximity to the highway will be advantage, since the company's raw materials and finished products will move by road. Project location is showing in **Figure No. 1**

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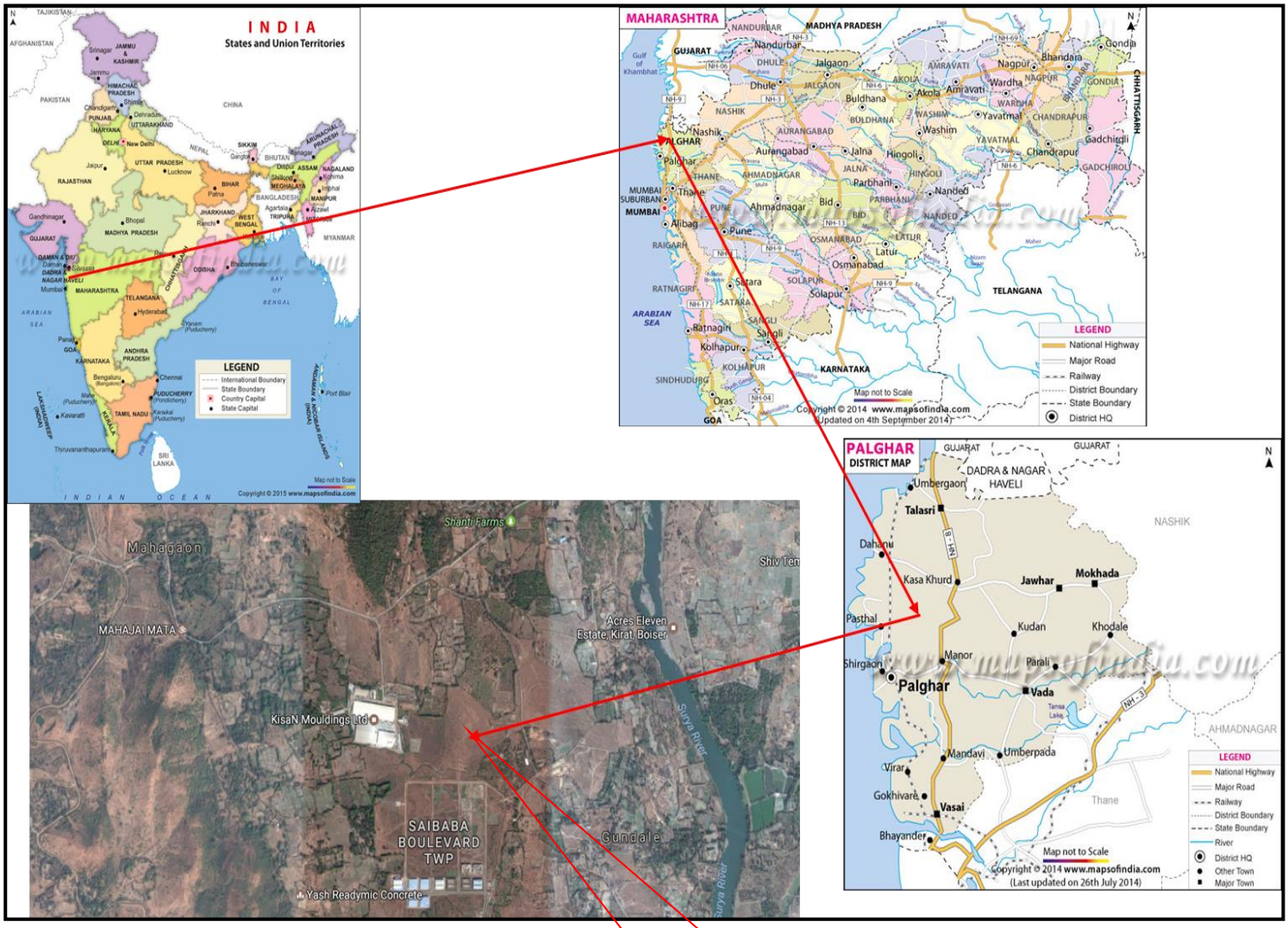


Figure No. 1 : Project Location

Figure No. 2: Google Imagery of the project site

iii.) *Details of alternative sites*

Proposed project is located on private land. Around the vicinity of project site most of mixed development is noted. Site has been finalized on the basis of following merits

- Land is in already possession of proponent
- There is no R & R issue
- 2.5 km away from NH-8 (Connected to Mumbai-Ahmedabad)
- Labour-force easily available from Mahagaon village
- District Palghar & industrial areas for market is 20 km away
- Daman airport is 75km away from project site
- Vicinity of Mahagaon is already developed with other industrial unit

iv.) *Size or magnitude of operations*

Below table revels that size & magnitude of operations:

Table No. 2 : Production Details

Sr. Nos.	Name of Chemical	Quantity in MT/Y
1.	Synthetic Acrylic Polymer Emulsions	**72000**
2.	Industrial Synthetic Adhesives, Glues	**9600**
3.	Thermosetting Acrylic Resins, Ethylene vinyl acetate Emulsions/powder	**12000**
4.	Polymer of Vinyl Acetate	**12000**
5.	Vinyl Copolymers	**12000**
6.	Water proofing compounds and Construction emulsions	**15000**
7.	Synthetic Organic/ Pigments & Preparation there on	**24000**
8.	Paper Chemical	**9000**
9.	Solvent based Adhesive	**6000**
10.	Styrene Polymer Emulsion	**24000**

v.) *Project Description with process details*

I. SYNTHETIC ADHESIVES (BATCH SIZE 10 MT)

Brief Process:

a. Reactor

- Charge RO Water 2258.3 Kg.
- Charge Sodium Lauryl Sulphate (SLS) - (6.6 Kg)
- Heat Up to 89 to 90 o C.
- Charge Sodium Lauryl Sulphate (7.5Kg), Sodium Bicarbonate (SBC) (3.9Kg).

b. Overhead Tank

- Charge RO water (3679.5 Kg) in overhead tank
- Charge SLS (43.6 Kg), Ethyl Acrylate (1671 Kg), Methacrylic acid - (1119 Kg) Di Allyl Phthalate (8.5 Kg) & Water (133.4 Kg)
- Start agitation
- Mix It Continuously & Check monomer emulsion.

c. Initiation

- Add 595 Kg monomer pre emulsion in reactor.
- Charge Potassium Persulphate-1 (catalyst) Solution (PPS 0.8 Kg + water 114.3 Kg).
- Charge Cobalt Nitrate (catalyst) Solution (0.1 Kg + water 1.9 Kg).
- Hold 30 Minutes wait for reaction. (Temp should be raise up to 93 ^{o} C).

d. Regular Feeding

- Star regular feeding of monomer pre emulsion for 2.5 to 3.0 hrs.
- Charge Potassium Persulphate-2 (catalyst) Solution (PPS 4.4 Kg + water 381.2 Kg).
- Control temp 90 to 92 ^{o} C.
- Hold for half hr.

e. Post Addition in Reactor

- Start cooling
- Formalin (28.5 Kg + water 537.5 Kg)

f. Quality Control Check

g. Filtration & Packing as per requirement.

II. TEXTILE AUXILIARIES (Batch Size 10 MT)

Brief Process:

a. Reactor

- Charge RO Water 1988.4 Kg.
- Charge X-305 43 Kg in reactor

b. Overhead Tank

- Charge RO water (1593.4 Kg) in overhead tank
- Charge X-305 (224.8 Kg), NMA 38% (459.4 Kg), urea (94.80 Kg)
- Start agitation & mix it for 15 minutes.
- Charge Acrylic Acid (142.7 Kg), Ethyl Acrylate (3851.4 Kg), & water (117.3 Kg)
- Mix It Continuously & Check monomer emulsion.

c. Initiation

- Add 1100 Kg monomer pre emulsion in reactor.
- Charge Ferrous sulphate (catalyst) Solution (FeSo4 0.2Kg + water 9.7 Kg).
- Hold 40 Minutes wait for reaction. (Temp should be raise up to 90 o C).
- Charge Potassium Persulphate-1 (catalyst) Solution (PPS 2.9 Kg + water 78.2 Kg).
- Charge Sodium Hydro sulphate (catalyst) Solution (1.7Kg + water 78.2 Kg).
- Temp Pick up from 34 to 65 o C with controlling.
- Hold for 20 Minutes

d. Regular Feeding

- After holding start regular feeding of monomer pre emulsion for 5.0 to 5.5 hrs.
- Add Potassium persulphate-2 (Catalyst) solution in reactor continuously for 5.0 to 5.15 hrs. (PPS 8.7 Kg + water 566.9 Kg).
- Add sodium Meta Bi sulphate (Catalyst) solution in reactor continuously for 5.0 to 5.15 hrs. (SMBS11.1 Kg + water 723.3 Kg).
- Control temp 65 to 67 o C.
- Hold for half hr.

e. Post Addition in Reactor

- Add TBHP (0.8 KG +Water 14.6 Kg) with half Hrs.
- Hold for half hr.

- Cool up to 55 o C.
- Add Formalin (8.6 Kg) & DF (5.8 Kg)

f. Quality Control Check

g. Filtration & Packing as per requirement

III. PRIMARY INK (Batch Size 0.3 MT)

Brief Process:

a. Reactor

- Charge RO Water 68 Kg.
- Charge T-580 (9 Kg), MEG (6 Kg)
- Start stirring
- Add titanium dioxide - (200 kg) slowly.
- Hold for 2.5 to 3.0 hr.
- Transfer to mixing tank
- Start stirrer & add RO water (47.0 Kg)
- Check Quality
- Pack as per requirement in 60 Kg, 30 kg. Carboy.

IV. ACRYLIC POLYMERS (Batch Size 25 MT)

Brief Process:

a. Reactor

- Charge RO Water (6582.0kgs) in reactor.
- Heat up to 35 to 40 degree centigrade.
- Charge Dainol-25, IG Surf -8405 (surfactant 12.0&12.0kgs) & Soda ash (7.0kgs) Check pH (10.0 to 11.0).
- Heat up to76 to78 ^{o} C.

b. Overhead Tank

- Charge RO Water (3750.0kgs) in Over Head tank.
- Charge Dainol-25 (surfactant 59.5kgs), Methacrylic Acid (265.0kgs) & Butyl Acrylate Monomer (13156.0kgs).
- Mix 60 minutes & check Monomer emulsion.

c. Initiation

- Add 520 kgs monomer pre-emulsion in reactor.
- Charge Potassium per Sulphate (Catalyst) (59.5kgs) + RO water (520.0kgs) solution.
- Hold for 30 minutes.(temp. should be rise up to 80 to 84^{o}C)

d. Regular feeding

- After holding start regular feeding of monomer pre-emulsion for 3.5 to 4.0 hours.
- Control temp. Between 87 to 90 ^{o} C.

e. Post Addition

- After feeding over hold for 0.5 hour then add Liquor Ammonia (23 %concentration) (28.750kgs) & Hold for15 minutes.
- Add Tertiary Butyl Hydroxy Peroxide (5.0kgs+ig surf 1.250kgs +RO water 37.5kgs) solution& Hold for 15 .minutes.
- Add Decolite (8.5kgs + RO water 102.5kgs) solution & Hold for 60 minutes.
- Cool up to 75 o C then add Alphox-300 (surfactant 95.0kgs + RO water 162.5kgs) & NH3.(88.5kgs)
- Cool up to 45^{o} C then add Formalin (47.5) & adjust pH 8.0 to 9.0.

f. Quality Control Check

g. Packing in 50 Kg & 240 Kg HDPE Barrels & Tankers

V. VINYL POLYMERS (Batch Size 10 MT)

Brief Process:

a. Reactor

- Charge RO Water (4833.6kgs) in reactor.
- Heat up to 45 to 50 degree centigrade.
- Charge GH-17R (Polyvinyl alcohol 292.100kgs).
- Heat up to 92 to94 degree centigrade & hold for 1.0 hour.
- Charge Sodium Lauryl Sulphate (Surfactant 1.3 kgs), Defoamer (SAPCO 1907b 0.800kgs) & Buffer (Sodium Bi Carbonate 12.600kgs)

b. Overhead Tank

- Charge Vinyl Acetate Monomer (4185.5kgs) in OH tank.

c. Regular Feeding in Reactor

- Charge Potassium Per Sulphate (PPS) (5.5kgs) + RO water (67.400kgs) solution in reactor.
- Start regular Vinyl Acetate Monomer feeding for 4.5 hour to 5.5 hour.
- Control temp 78 degree centigrade to 84 degree centigrade.
- Add PPS (3.8kgs) + RO water (225.2kgs) solution in every 30 minutes during monomer addition.
- After monomer addition hold for 1.0 hour.
- Cool up to 50 degree centigrade.

d. Post Addition

- Add formaldehyde (9.4kgs) &RO water (97.8kgs)

e. Quality Control Check

f. Packing in 220 Kg HDPE Barrels

VI. GLUE & ADHESIVES (Batch Size 10 MT)

Brief Process:

a. Reactor

- Charge RO Water (3882.4kgs) in reactor.
- Heat up to 45 to 50 degree centigrade.
- Charge GH-17R (Polyvinyl alcohol 69.8kgs) & LR (Hydroxy Ethyl Cellulose 69.8kgs).
- Heat up to 92 to94 degree centigrade & hold for 60 minutes.
- Charge Alphox 500, SR-610 (surfactant 47.9 &95.8kgs) & Ammonia (29.8kgs) at 83 degree centigrade to 84 degree centigrade.

b. OH Tank

- Charge Di Octyl Maleate(1881.4kgs),2 Hydroxyl Ethyl Acrylate (1059.1kgs),Vinyl Acetate Monomer (1849.9) & Di Allyl Maleate (4.3kgs) in OH tank.
- Mix for 30 minutes.

c. Regular Feeding

- Charge Potassium per sulphate - PPS (8.7kgs) + RO water (164.7kgs) solution in reactor.
- Start regular monomer feeding for 4.0 hour to 4.5 hour.
- Control temp 78 degree centigrade to 84 degree centigrade.
- After monomer mix addition hold for 0.5 hours.
- Prepare PPS (9.6kgs) + RO water (164.7kgs) solution.
- Add 1/3 part of PPS & hold for 30 minutes.
- Add 1/3 part of PPS & hold for 30 minutes.
- Add 1/3 part of PPS & hold for 1.5 hour.
- Cool up to 65 degree centigrade.

d. Post Addition

- Add Di Butyl Phthalate (349.5kgs), Caustic Potash (6.8kgs+RO water49.8) & mergal K9N (7.8kgs).
- Add PA-40(surfactant 130.7kgs), Octonal (98.7kgs) & Defoamer (sapco NDW 9.4kgs+RO water 9.4kgs). Mix 1.5 hour.
- Cool up to 40 to 45 degree centigrade.

e. Quality Control Check

f. Packing in 0.5 Kg, 1 Kg, 5 Kgs, 7.5 Kg, 20 Kg, 50 Kg And 220 Kg.

VII. STYRENE ACRYLIC POLYMER (Batch Size 26 MT)

Brief Process:

a. Reactor

- Charge RO Water (6200.0kgs) in reactor.
- Heat up to 78 to 80 degree centigrade.
- Charge Dowfax, AY-56 (surfactant 56.160&110.5kgs) & Sodium Sulphate (10.660 kgs) Check pH (6.0 to 6.5).
- Heat up to 82 to 84 º C.

b. Overhead Tank

- Charge RO Water (3542.24kgs) in Over Head tank.
- Charge Dowfax, AY-56 (surfactant 170.04 & 35.620gs), OPS-25 83.720 Kg, Acrylic Acid (211.64kgs) & Butyl Acrylate Monomer (6208.8kgs). Styrene Monomer (6035.4kgs).
- Mix 60 minutes & check Monomer emulsion.

c. Initiation

- Add 830.0 kgs monomer pre-emulsion in reactor.
- Charge Potassium per Sulphate (Catalyst) (4.160kgs) + RO water (147.68.0kgs) solution.
- Hold for 30 minutes.(temp. should be rise up to 88 to 89 º C)

d. Regular feeding

- After holding start regular feeding of monomer pre-emulsion for 3.5 to 4.0 hours.
- Add PPS Simultaneously in reactor (37.44 Kg) RO water (1500 Kg)
- Control temp. Between 88 to 92 º C.

e. Post Addition

- After feeding over hold for 0.5 hour then add PPS (12.220 Kg) + RO water (249.3 Kg)
- Add Decolite (7.02 Kg) + RO water (103.220 Kg) at 83 to 85 deg
- Add Liquor Ammonia at 60 deg (23 %concentration) (233.74 kgs) & Hold for15 minutes.
- Add formiline (86.32 Kg) + NDW (12.220 Kg)
- Cool up to 45 ^{o} C then adjust pH 8.0 to 10.0.

f. Quality Control Check

g. Packing in 50 Kg & 240 Kg HDPE Barrels & Tankers

VIII. CONSTRUCTION AND WATERPROOFING EMULSION (Batch Size 10 MT)

Brief Process:

a. Reactor

- Charge RO Water (1721.6kgs) in reactor.
- Heat up to 78 to 80 degree centigrade.
- Charge SLS & SBC (7.50 & 3.900 kgs) RO water 108.6 & 98.7 Kgs

b. Overhead Tank

- Charge RO Water (1718.3 kgs) in Over Head tank.
- Charge X405 (95.9 Kgs), SLS (15.100 Kg), Acrylic Acid (171.8 kgs) & Butyl Acrylate Monomer (2169.4 kgs). Styrene Monomer (2109.2 kgs).
- Mix 60 minutes & check Monomer emulsion.

c. Initiation

- Add 340 kgs monomer pre-emulsion in reactor.
- Charge Potassium per Sulphate (Catalyst) (16.600 kgs) + RO water (296.2 kgs) solution.
- Hold for 30 minutes.(temp. should be rise up to 84 to 85^{0} C)

d. Regular feeding

- After holding start regular feeding of monomer pre-emulsion for 3.5 to 4.0 hours.
- Add PPS Simultaneously in reactor (4.160 Kg) RO water (230.0 Kg)
- Control temp. Between 84 to 86 ^{o} C.

e. Post Addition

- After feeding over hold for 0.5 hour then add TBHP (3.100 Kg) + RO water (23.0 Kg)
- Add Decolite (3.100 Kg) + RO water (65.8 Kg)
- Add Liquor Ammonia at 60 deg (23 %concentration) (158.0 kgs) RO water (182.0 Kgs), add X405 (20.100 Kgs) RO water (20.100 Kgs), Sodium Sulphate (95.0 Kgs RO water (248.5Kgs) & Hold for15 minutes.
- Add formiline (4.9 Kg)
- Cool up to 45 ^{o} C

f. Quality Control Check

g. Packing in 50 Kg & 240 Kg HDPE Barrels & Tankers

IX. PAPER/BOARD COATING BINDER (Batch Size 1 MT)

Brief Process:

a. Reactor

- Charge RO Water (238.5.0kgs) in reactor.
- Heat up to 78 to 80 degree centigrade.
- Charge Dowfax, AY-56 (surfactant 2.160&4.25kgs) & Sodium Sulphate (0.41 kgs) Check pH (6.0 to 6.5).
- Heat up to 82 to 84^{o}C.

b. Overhead Tank

- Charge RO Water (136.240kgs) in Over Head tank.
- Charge Dowfax, AY-56 (surfactant 6.540 & 1.37 Kgs), OPS-25 (3.220 Kg,) Acrylic Acid (8.140kgs) & Butyl Acrylate Monomer (238.77kgs). Styrene Monomer (232.13kgs).
- Mix 60 minutes & check Monomer emulsion.

c. Initiation

- Add 31.92 kgs monomer pre-emulsion in reactor.
- Charge Potassium per Sulphate (Catalyst) (0.160kgs) + RO water (5.68kgs) solution.
- Hold for 30 minutes.(temp. should be rise up to 88 to 89^0C)

d. Regular feeding

- After holding start regular feeding of monomer pre-emulsion for 3.5 to 4.0 hours.
- Add PPS Simultaneously in reactor (1.44 Kg) RO water (57.70 Kg)
- Control temp. Between 88 to 92^0 C.

e. Post Addition

- After feeding over hold for 0.5 hour then add PPS (0.470 Kg) + RO water (9.58 Kg)
- Add Decolite (0.27 Kg) + RO water (3.97 Kg) at 83 to 85 deg
- Add Liquor Ammonia at 60 deg (23 %concentration) (8.990 kgs) & Hold for15 minutes.
- Add formiline (3.320 Kg) + NDW (0.470 Kg)
- Cool up to 45 o C then adjust pH 8.0 to 10.0.

f. Quality Control Check

g. Packing in 50 Kg & 240 Kg HDPE Barrels & Tankers

X. SOLVENT BASE ADHESIVES (Batch Size 1 MT)

Brief Process:

a. Reactor

- Charge Ethyl Acetate (400.0 kgs) & Butanol (10 Kgs) in reactor.
- Heat up to 70 to 80 degree centigrade & hold for 60 minutes.

b. OH Tank

- Charge ACRYLIC ACID (20.0 kgs),2 Hydroxyl Ethyl Acrylate (200.0 kgs),Vinyl Acetate Monomer (300.0 Kgs) EGDM (1.0 kgs) in OH tank.

- Mix for 30 minutes.

c. Initiation

- Add 15 kgs monomer mixture in reactor. Catalyst PPS (2.0 Kg)+ Ethyl Acetate (48.0 Kgs)
- Hold for 30 minutes.(temp. should be rise up to 80 to 90 ^{o}C

d. Regular Feeding

- Start regular monomer feeding for 6.0 hour to 6.5 hour.
- Control temp 78 degree centigrade to 84 degree centigrade.
- After monomer mix addition hold for 0.5 hours.
- Prepare PPS (0.4kgs) + Ethyl Acetate (18.0 kgs) solution.
- Add 1/3 part of PPS & hold for 30 minutes.
- Add 1/3 part of PPS & hold for 30 minutes.
- Add 1/3 part of PPS & hold for 1.5 hour.
- Cool up to 40 to 45 degree centigrade.

e. Quality Control Check

f. Packing in 0.5 Kg, 1 Kg, 5 Kgs, 7.5 Kg, 20 Kg, 50 Kg And 220 Kg.

vi.) *Raw Material Requirement & Its Source*

Product wise raw material requirement & its source are presented in below table

Table No. 3: Product wise raw material details

Sr. No.	Name of the Product	Raw Materials	Quantity (in MT/MT)
1	**Synthetic Adhesive**	SLS	0.006
		Sodium Bi Carbonate	0.0004
		Ethyl Acrylate	0.17
		Methacrylic Acid	0.113
		Di AllylPthalate	0.0009
		PPS(Catalyst)	0.0006
		Cobalt Nitrate(Catalyst)	0.00001
		Formalin	0.003
2	**Textile Auxiliaries**	X-305	0.03
		NMA (38%)	0.05
		Urea	0.01
		Acrylic Acid	0.015
		Ethyl Acralte	0.4
		Ferrous sulphate	0.00002
		PPS (Catalyst)	0.0012
		Sodium Hydro Sulphate(Catalyst)	0.00017
		TBHP	0.00008
		DF	0.0006
		Formalin	0.0009
		Sodium Meta Bi Sulphate (Catalyst)	0.0012
3	**Primary Ink**	T-580	0.03
		MEG	0.02
		Titenium Dioxide	0.61
4	**Acrylic Polymers**	Dianol-25	0.003
		IG Surf	0.0006
		Soda Ash	0.0003

		Methacrylic Acid	0.011
		Butyl Acrylate Monomer	0.53
		PPS (Catalyst)	0.0024
		Liquor Ammonia (23% Conc.)	0.0012
		TBHP	0.00020
		Decolite	0.0009
		Alphox-300	0.004
		NH3	0.004
		Formalin	0.002
5	**Vinyl Polymers**	Polyvinyl Alcohol	0.03
		Sodium Lauryl Sulphate	0.00013
		Defoamer	0.00008
		Vinyl Acetate Monomer	0.42
		Sodium Bi Carbonate	0.027
		Buffer	0.0013
		PPS (Catalyst)	0.001
		Formaldehyde	0.001
6	**Glue & Adhesive**	Polyvinyl Alcohol	0.007
		Hydroxyl Ethyl Cellulose	0.007
		Alphox 500	0.005
		SR-610	0.01
		Ammonia	0.003
		Di Octyl Maleate	0.2
		2 Hydroxyl Ethyl Acrylate	0.106
		Vinyl Acetate Monomer	0.2
		Di Allyl Maleate	0.00043
		PPS (Catalyst)	0.002
		Di Butyl Phalate	0.035
		Caustic Potash	0.0007
		Mergal K9N	0.0008
		PA-40	0.012
		Octanol	0.01
		Deformer	0.001
		Polyvinyl Alcohol	0.007
		Hydroxyl Ethyl Cellulose	0.007
7	**Styrene Acrylate**	Dowfax	0.0086

	Polymer	AY 56 (70%)	0.0056
		OPS 25	0.0032
		Butyl Acrylate	0.2388
		Styrene Monomer	0.2321
		Acrylamide	0.0067
		Acrylic Acid	0.0081
		Sodium Sulphate	0.0004
		PPS	0.0021
		Decolite	0.0002
		NDW	0.0005
		Ammonia	0.0090
		Formalin	0.0033
8	**Construction and waterproofing Emulsion**	X-405	0.0116
		SLS	0.0022
		Styrene Monomer	0.2109
		Butyl Acrylate	0.2169
		Acrylic Acid	0.0171
		SBC	0.0004
		PPS	0.0023
		TBHP	0.0003
		Decolite	0.0003
		Ammonia	0.0158
		Sodium Sulphate	0.0095
		Formiline	0.0005
9	**Solvent Base Adhesives**	Ethyl Acetate	0.418
		Butanol	0.010
		Acrylic Acid	0.020
		2EHA	0.20
		VAM	0.30
		EGDM	0.001
		PPS	0.006
10	**Paper/Board Coating Binder**	Dowfax	0.0086
		AY 56 (70%)	0.0056
		OPS 25	0.0032

		Butyl Acrylate	0.2388
		Styrene Monomer	0.2321
		Acrylamide	0.0067
		Acrylic Acid	0.0081
		Sodium Sulphate	0.0004
		PPS	0.0021
		Decolite	0.0002
		NDW	0.0005
		Ammonia	0.0090
		Formalin	0.0033

vii.) *List of Plant Machineries*

Sr.No.	Equipment	Capacity
1.	Reactor SS316	10 KL
2.	Reactor SS316	25 KL
3.	Reactor SS316	3 KL
4.	Reactor SS316	5 KL
5.	Reactor SS316	0.6 KL
6.	Emulsion Tank	9 KL
7.	Emulsion Tank	20 KL
8.	Emulsion Tank	3.5 KL
9.	Emulsion Tank	0.5 KL
10.	Emulsion Tank	4 KL
11.	Emulsion Tank	7 KL
12.	Solution Tank	--
13.	Catalyst Vessel	--
14.	Blender	30 KL

Utilities

1. Boiler, 850 kg/hr. Oil Fire (NON IBR)
2. Cooling Tower
3. Chilling Plant
4. Air Compressor.
5. Miscellaneous.
6. Effluent Treatment Plant.

viii.) *Auxiliary Requirement*

Details of auxiliary requirement & it source are presented below

Table No. 4: Details of Auxiliary

Sr.No.	Auxiliary	Requirement	Source
1.	Water	350 CMD	Ground water
2.	Power	250 KVA	MSEDCL
3.	DG Set	250 KVA	--
4.	Cooling Tower		
5.	Boiler		

ix.) *Water Requirement & Its Management*

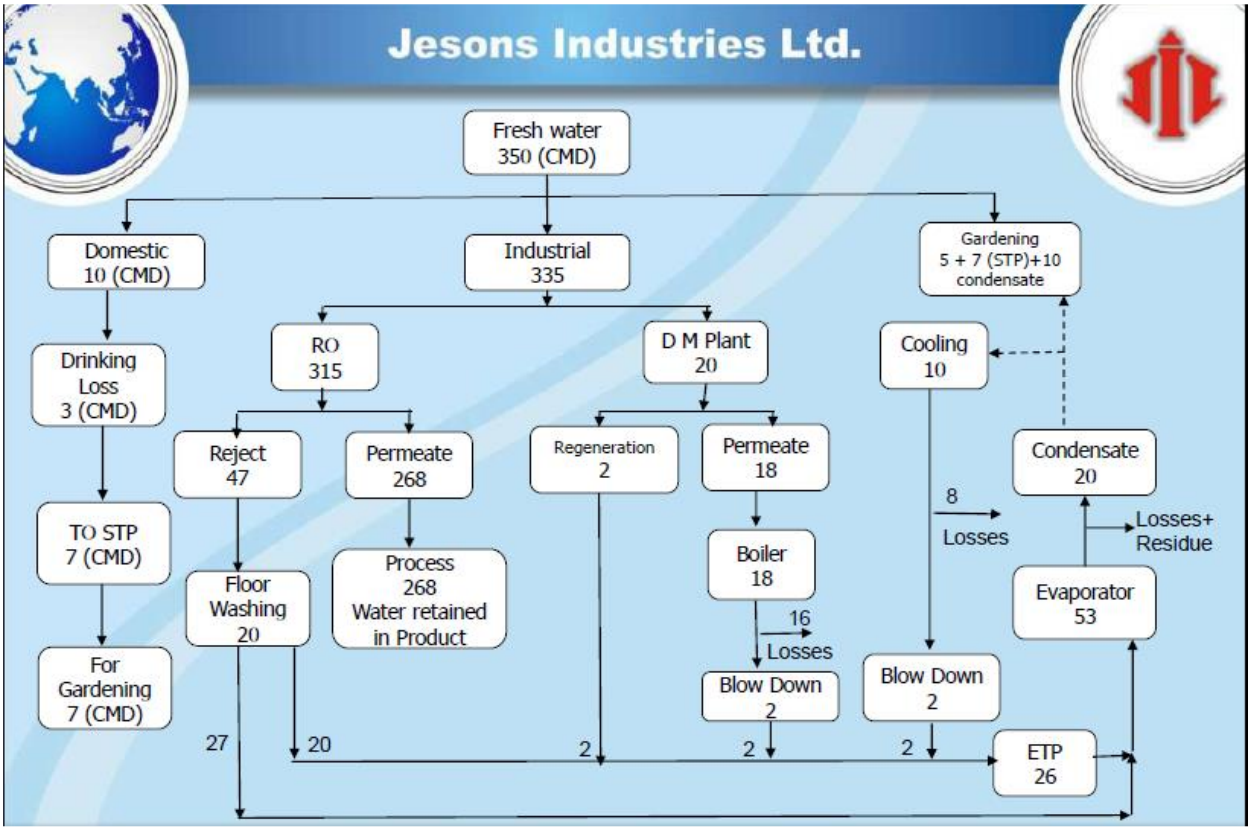


Figure No. 3: Water Budget

x.) *Waste Generation & Management*

Construction Phase: Average solid waste generation over the period of construction would be 50MT viz. metal pieces, cardboard, rags etc. that will be segregated as per characteristics & disposed of through authorized vendor.

Operation Phase: Domestic waste would be generated in the form of dry waste 38 kg/day & 25 kg/day of wet waste. It will be collected at designated place and disposed-off through authorized vendor.

Commercial Waste : Wooden box, raw chemical plastic drum etc. would be disposed off through authorized vendor.

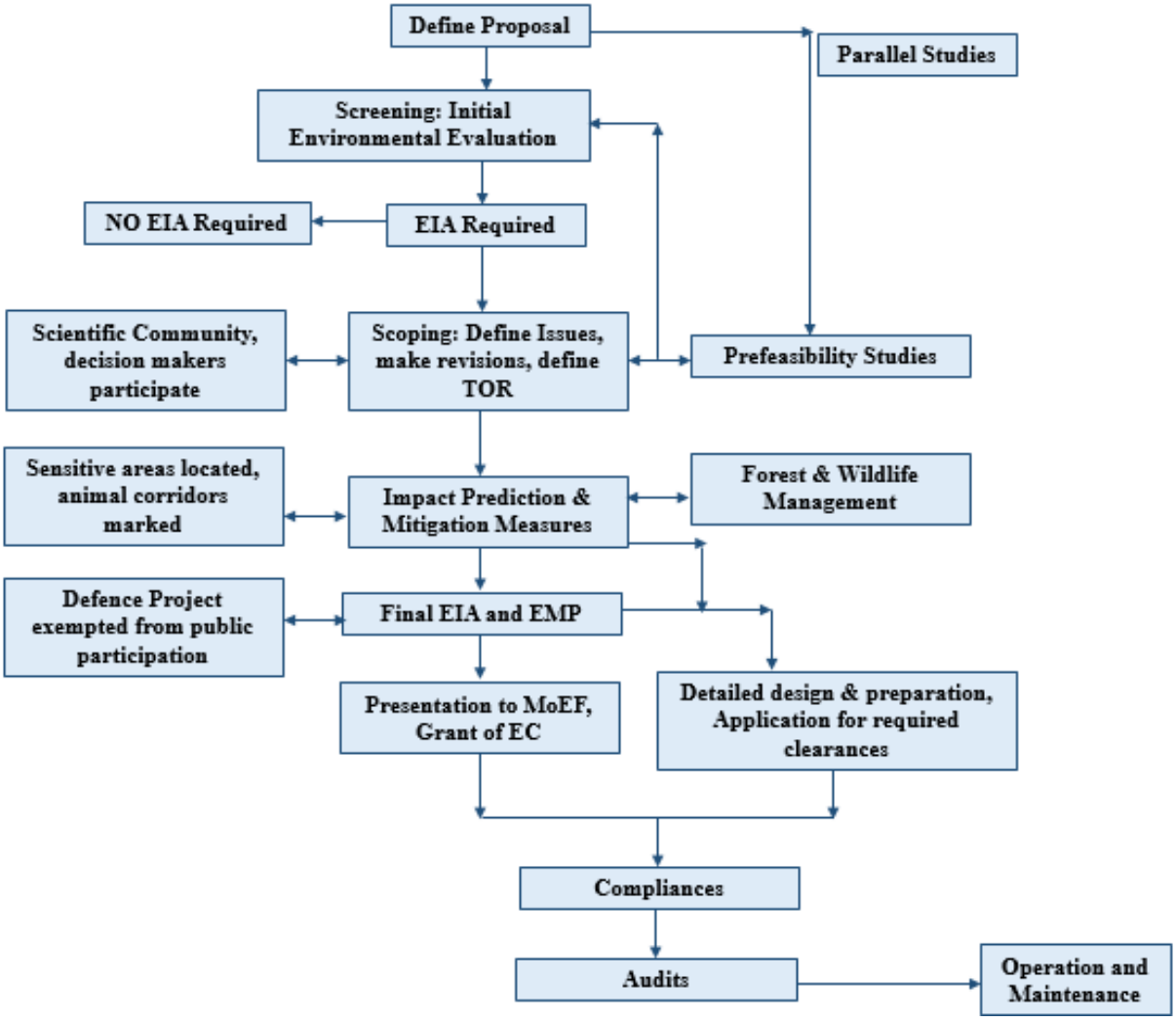
Industrial Waste:

Hazardous wastes generated will be in the form of ETP waste from Effluent Treatment Plant, Used oil from gear boxes of the machineries and discarded bags/drums. Company will be provided adequate storage area for proper storage of wastes.

Table No. 5: Details on Industrial Waste Generation & Management

Sr.No.	Hazardous Waste	Quantity	Disposal
1.	Gel Scrap	500 kg./Month	**Send to CHWTSDF, Taloja**
2.	Process waste	3000 kg./Month	
3.	Used Oil	25 Liter/Month	
4.	ETP Sludge	1000 kg./Month	
5.	Plastic drums	300 Nos./Month	
6.	E-Waste	20 kg/month	**Authorized vendor**

xi.) Schematic representations of the feasibility drawing which give information of EIA purpose.



4. SITE ANALYSIS

i.) Connectivity

Site is located in developed in Mahagaon village. Site is 6.5KM away from Boisar Village and it is well connected to NH-8. District headquater Palghar is 12 km & Daman Airport is 63 km away from site.

ii.) Land form, Land use & Land ownership.

Proposed site is non-agricultural private land which is in already possession of proponent.

iii.) Topography

Topography of land is flat & table land.

iv.) Environmental Infrastructure Around the project Site

Around the project site mix development is identified. Boiser industrial area is 6.5 km away from project site. NH-8 (Mumbai- Ahmedabad) is 9 km away from site. Other arterial roads which have an accessibility to site are well developed.

v.) Geology & Soil Classification

The region is underlain by basaltic rocks. Basalt flow forms the predominant formation capped at a few places by laterite at higher levels. A number of hot springs occur in Thane district which have positive relation with the geology of the area. The hill ranges in the area are predominantly aligned north-south and have more or less escarpments.

Basalt flows, popularly known as Deccan traps, forms the predominant formation. It is capped by laterite on a few high plateaus and covered by shore sands along the coast.

A general geological sequence is Shore sand- Recent, Laterite-Pleistocene and Basalt-Eocene.

vi.) Climatic Conditions

a. Seasons

The location of the town being in the hot and temperate region and in the areas covered by the south western prevailing winds, there are two distinct seasons, one extending from mid June to September, and the other for the rest of the year. In this season there are rare rains due to local cyclones or depress.

b. Rainfall

The average annual rainfall is about 700 mm. The highest rainfall occurs in the month of July. The rainfall is not evenly distributed in a period of a year.

c. Temperature

The average minimum and maximum temperature at Palghar ranges from 10.5^0C and 38^0C respectively. The maximum average monthly temperature of 280C is recorded in the month of May. The minimum average (monthly temperature) 22^0C is recorded in the month of February. Palghar is not directly coastal town and hence the temperature variation during the year is minor.

d. Humidity

The humidity of Palghar town occasionally falls below 50%. During the monsoon season the sky is heavily clouded. In the months of May and October the clouds are moderate.

e. Wind Direction

In the month of January February wind flows from North to East. During monsoon season wind flows very strong, from South or South West. During a period from October to December winds are generally moderate, but they are sometimes strong in October, and flows from North – East and/ to South–East. In April, while there is a slight strengthening of wind, the wind direction constantly changes. In May there is further strengthening of wind flows from direction of North – West and/ to South –West.

vii.) Social Infrastructure

No major social infrastructure identified in Mahagaon area. While Boisar is taluka place which is 6.5 km away from site and its industrial zone therefore all social infrastructure facilities are identified. Site is on private land so basic amenities like roads & electricity are available.

Schools, medicals, grocery market, vegetable market, drinking water facility, sewerage network, bus stop, bank etc. basic amenities are identified in Mahagaon.

5. PLANNING BRIEF

i.) Planning Concept

Proposed industry will be developed as per local planning approval authority of Mahagaon.

ii.) Population Projection

In construction phase of the proposed industry around 100 nos. of local youth & 50 nos. outside area labour force will deploy on site, similarly in operation phase of the industry 100 nos. of local population & 150 nos. outside population will be employed therefore there will be increase in population of Mahagaon & surrounding areas during construction and operation phase of the industry.

iii.) Land use

Plot Area	**:**	43946.10 Sq.M.
Proposed Built-Up Area	**:**	21000 .00 Sq.M
Open Area	**:**	4000.00 Sq.M.
Green Belt Area	**:**	5000.00 Sq.M

iv.) Assessment of Infrastructure Demand

Road , educational facilities & employment are the basic demand of the area. In addition to this sustainable development is the demand of the area.

v.) Amenities & Facilities

Village road should be strengthen to speedy approach to site. For sewage treatment packaged STP will be provided. Effluent treatment plant with multi-effect evaporator system should be provided to achieve Zero Liquid Discharge scheme.

6. PROPOSED INFRASTRUCTURE

Plot Area	:	43946.10 Sq.M.
Proposed Built-Up Area	:	21000 .00 Sq.M
Open Area	:	4000.00 Sq.M.
Green Belt Area	:	5000.00 Sq.M
Social Infrastructure	:	Strengthening of village road.
Connectivity	:	MSH Road is already developed.
Drinking water management	:	In Mahagaon village grampanchayt drinking water facility is available. At plant site packed RO filtered drinking water facility will be provided.
Sewerage System	:	During construction phase all sewerage network connected to septic tank followed by soak pit
Industrial waste	:	Industrial hazardous waste will send to CHWTSDF facility while non-hazardous waste disposed off through authorized vendor.
Solid waste management	:	Generated domestic solid waste segregated as dry waste & wet west and disposed off at Mahagaon Grampanchayat management system.
Power Requirement & Supply		Total power demand of the project would be 250 KVA and it will supply through MSEDCL.

7. Rehabilitation & Resettlement (R & R) Plan

Proposed project site is in already possession of proponent. There is no requirement of R&R plan.

8. PROJECT SCHEDULE & COST ESTIMATE

i.) **Likely date of start of construction and likely date of completion [time schedule for the project to be given]**

Proposed industry can be establish after obtaining Environment Clearance from Env. Dept., Maharashtra Govt. and Consent to Establish from Maharashtra Pollution Control Board. The total time requirement for completion of construction would be 12 months from the date of start of construction.

ii.) **Estimated project cost along with analysis Break-up Cost**

Estimated total cost of the project would be Rs. 50 Cr.

9. ANALYSIS OF PROPOSAL [FINAL RECOMMENDATION]

i. Financial and social benefits with special emphasis on the benefits to the local people including tribal population, if any in the area

Jesons Industries Ltd. is proposed to establish synthetic organic industry having capital cost of Rs.50 Cr. Industry willing to manufacture 10 type of synthetic organic chemical that will be used as Acrylic polymer, Emulsions, Industrial Synthetic Adhesives and Glues, Thermosetting Acrylic Resins, Polymer of Vinyl Acetate and Vinyl Copolymers, Ethylene Vinyl Acetate Emulsions etc

Directly or indirectly proposed industry will provide social benefit in the form of employment generation to local youth, infrastructure development in Mahagoan village as well as financial benefits in the form of revenue generation to local ruling authority.