

# **Executive summary**

Of

# Environmental Impact Assessment Report For Public Hearing

Of New Project of Bulk drugs and Speciality Chemicals

M/s. ASolution Pharmaceuticals Private Limited

Plot No. K 3/8, Additional Ambernath, MIDC, Ambernath, Dist. – Thane, State – Maharashtra

**Prepared by** 



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**M/s ASolution Pharmaceuticals Private Limited** proposes to manufacture Active Pharmaceutical Ingredients, Intermediates and Specialty chemicals, herbal and natural products, specialty chemicals, organic chemicals & Formulation of total capacity 3,590 MT/Annum. It is a proposed manufacturing unit with MPCB consent for Research and Development facility. The manufacturing plant of M/s ASolution Pharmaceuticals Pvt Ltd, is located at plot no: K-3/8 owned by the company in Additional Ambernath, MIDC, Ambernath (E), Dist: Thane, Maharashtra. The site is 5 km from Ambernath town. The Geographical Location of this Industry is 19<sup>o</sup> 10' N Latitude and 73<sup>o</sup> 12' E longitude with an elevation of 1975 ft. (500 m) above sea level MSL.

The proposal by M/s Asolution Pharmaceuticals falls under category 5(f) of schedule and need prior environmental clearance. It is stated that 5(f) industries located in a notified industrial area are classified under category B and would be appraised by State Level Expert appraisal committee/ impact assessment authority. However, based on the OM dated 16th May 2014 by Director MoEF, Public Hearing is required for the proposals in Industrial Estates / Parks which have not taken Environmental Clearance.

This Environmental Impact Assessment (EIA) is to provide information on the potential negative and positive environmental and social impact of the project. It also aims to make recommendations for the mitigation of the potential negative impacts and enhancement of the positive one. A field survey of the project site was conducted and potential environmental impact of project activities were identified, assessed, and documented. The EIA team carried out consultation with local authorities and the affected people.

Environmental Protection Act (1986) policies have been considered during the assessment. The EIA has been proposed according to the EIA format regarding the requirement of the Indian Ministry of Environment and Forestry. This project meets the requirement of Indian Ministry of Environment and Forestry. This EIA study has been conducted by Goldfinch Engineering Systems Pvt. Ltd.

# **1.1 PROJECT DESCRIPTION**

The intended pharmaceutical plant will comprise manufacturing of products in segments of bulk drugs (API), Herbal Products, natural products, specialty chemicals, organic chemicals & formulation. The proposed production capacity will be 3,590 MT/Annum. The plant will be

constructed in notified Industrial area in additional Ambernath, MIDC, Ambernath. The plant will cover a land of 9,450 Sq. Mtrs.

# 1.2 SITE LOCATION

The proposed activity is scheduled to commence on plot no. K – 3 / 8, MIDC, Additional, Ambernath, Thane district. The site is located at rural surroundings and is about 20 km from Mumbai - Pune highway, 6 km from Ambernath railway station and is in the midst of Industries located in MIDC. The factory building will be sufficiently away from highway and railway.

The Geographical Location of this Industry is  $19^{\circ}$  10' N Latitude and  $73^{\circ}$  12' E longitude with an elevation of 1975 ft. (500 m) above sea level MSL. The plot is a developed MIDC plot.

# 1.3 EXTENT OF STUDY AND STUDY COVERED

Environmental Impact Assessment report is prepared based on the studies carried out during November 2012, December 2012 & January, 2013 based on the model ToRs by SEAC Maharashtra. The Environmental parameters for ambient air quality, water quality, soil, noise, were selected for studies are those which are likely to be affected by the project. The study area is defined as an area within 10kms radius around site.

# 1.4 METHOD OF STUDY

Based on the MoEF guidelines studies were carried out based on the identified nature of activities involved and their impacts caused on various environmental parameters. This report subsequently suggests mitigation measures to be executed for safeguarding against any environmental degradation. Finally it suggests methods of implementing the environmental management plan.

# 2. **PROJECT DETAILS**

M/s ASolution Pharmaceuticals Pvt. Ltd. has proposed to manufacture the following products.

S. N.	Class	Product Name	<b>Capacity in TPA</b>
		Glimepiride - API and its intermediates	
1	Anti-diabetic	Metformin hydrochloride - API and its intermediates	2833.00
		Glipizide	
		Zoledronic Acid - API and its intermediates	
2	Anti-migrane	Frovatriptan-API and its intermediates	18.00
		Eletriptan	
3	Anti-hypertensive	Irbesartan PH.EUR/USP-API and its intermediates	27.00

		Trandolapril - API and its intermediates	
		Isradipine	
		Olmesartan-API and its intermediates	
		Telmisartan API and its intermediates	-
		Valcartan_API and its intermediates	-
		Latrazala API and its intermediates	
4	Aromatase inhibitor	Propofol - API and its intermediates	7.00
		Valproic acid-API and its intermediates	
		Sodium valproate-API and its intermediates	-
5	Bipolar Disorder	Divalproes sodium-API and its intermediates	64.00
		Aripiprazole-API and its intermediates	-
		Bimatoprost-API and its intermediates	
		Latanoprost-API and its intermediates	
6	Clause	Travoprost-API and its intermediates	26.00
6	Giaucoma	Brimonidine-API and its intermediates	36.00
		Betaxolol-API and its intermediates	
		Pilocarpine-API and its intermediates	
7	Anti-Dyskinetic	Ropinirole hydrochloride	5.00
Q	Anti-platelate	Clopidogrel bisulphate USP-API and its	10.00
0		intermediates	10.00
9	Anti-acne	Imiquimod-API and its intermediates	15.00
		Ensulizole-API and its intermediates	15.00
		Atropine-API and its intermediates	-
10	Ophthalmic	Cyclopentolate-API and its intermediates	19.00
10	opricilianite	Carbachol-API and its intermediates	
		Acitazanolast-API and its intermediates	
11	Obesity	Rimonabant-API and its intermediates	4.00
		Contrave-API and its intermediates	
10	Tuboroulogia	Rifabutin-API and its intermediates	10.00
12	Tuberculosis	Simvasidim-API and its intermediates	10.00
		Solifenacio-API and its intermediates	
13	Urinary inconsistency	Darifenacin-API and its intermediates	12.00
15	officially inconsistency	Oxybutynin	12.00
		Escitalopram oxalate	
		Paroxetine HCl	-
14	Anti-Depressant	Imipramine HCI	30.00
	· · · · · · · · · · · · · · · · · · ·	Sertraline	
		Venlafaxine	-
4.5	Developth and a section	Bupropion HCl	12.00
15	Psychotherapeutics	Duloxetine	12.00
16	Irritable bowol	Tegaserod-API and its intermediates	10.00
10		Lubiprostone	10.00
17	Anti-histamine	Cetirizine DI-HCL-API and its intermediates	25.00
18	Bronchodilator	Erdosterine-API and its intermediates	5.00
19	Anti-Asthmatics	Formoterol	6.00
		Fosphenytoin sodium	-
20	Anti-convulsants	Levetiracetam	18.00
		Zonisamide	
21	Cholesterol	Rosuvastatin calcium	12.00
		Fluvastatine	

		Ziprasidone-API and its intermediates	
22	Anti-psychotic	Risperidone	17.00
		Olanzapine	
		Zidovudine	
23	NRTI	Lamivudine	12.00
	For chronic renal	Sevelamer carbonate-API and its	
24	failure	intermediates	5.00
25	Low density	Colesevelam-API and its intermediates	5.00
26	,,	Nitrofurantoin-API and its intermediates	
26	Anti-bacterial	Moxifloxacin	66.00
27	Anesthetic	Prilocaine-API and its intermediates	5.00
28	ANSAJ	Nabumetone - API and its intermediates	80.00
29	ARMD	Anecortagve acetate	10.00
20		Dexmethylphenedate-API and its	2.00
30	ADHD	intermediates	2.00
31	Calcitrol	Falecalcitriol-API and its intermediates	10.00
32	Epileptic	Pregabalin-API and its intermediates	10.00
33	Erectile dysfunction	Alprostadil-API and its intermediates	5.00
34	Fungal	Voriconazole-API and its intermediates	10.00
35	Hyperuricemia	Allopurinol-API and its intermediates	60.00
36	Parkinson	Cabergoline-API and its intermediates	5.00
37	Thyroid	Nitisinone-API and its intermediates	2.00
38	Cytoprotective agent	Amifostine	6.00
39	Stimulant	Armodafinil	6.00
40	Anti-infective	Atovaquone	6.00
41	BPH agents	Finasteride	6.00
42	Eugeroic	Modafinil	6.00
43	Leukotriene receptor antagonist	Montelukast Na	6.00
44	Gastroprokinetic agent	Mosapride	6.00
45	Proton pump inhibitor	Pantoprozole sodium	6.00
46	ACE inhibitor	Ramipril	6.00
47	NSAID	s + Ibuprofen	6.00
48	PDE5 inhibitor	Tadalafil	6.00
49	Muscle relaxant	Tizanidine HCI	6.00
50	Non-benzodiazepine hypnotic	Zopicolone	6.00
51	Anti-convulsants	Lamotrigine	6.00
52	SERM	Lasofoxifene	6.00
53	Anti-hypertensive	Lercandipine HCI	6.00
54	Anti-viral	Acyclovirs	6.00
55	Polysomnography drug	Ezopiclone	6.00
	Total		3590

# 2.1 POWER/ENERGY REQUIREMENTS

Total need for this proposed project is 750 kW. The required power connection is available from MSEDCL who will fulfill the need for the new unit power.

Connected load: 300 KVA Max. Demand: 600 KVA Transformer capacity: 630 KVA Sanctioned Load: 600 KVA One DG set of 250 KVA for emergency power will be required.

# FUEL /STEAM REQUIREMENT

The details are as follows:

Fuel	Briquette
Fuel quantity	Briquette: 220 Tons / month.

### 2.2 WATER REQUIREMENT

The total water requirement for the project is  $136 \text{ m}^3$  /day. This will be met by supply of fresh water from MIDC and steam condensate recycles.

Source of Use	WATER (CMD)			EFFLU	JENT (CMD)
	Consumption	Losses	Additions	Domestic	Industrial
Domestic	5.0	1.00	0.00	4.00	
Industrial processing	30.0	1.00	+ 5.0 water of reaction		34
Cooling Water Make Up	48.00	24.00 evaporation	0.00		24.00
Boiler feed	48.0	34.0 - 8.0 from MEE to ETP 26.0 Cond. Recycle	0.00		14.00 + 8.00 (from MEE) = 22.00
Gardening	5.00	5.0	0.00		
Total – (A)	136.00	58.00	5.00	4.00	80.00
Recycled from Condensate – (B)	26.00				_
Fresh Water requirement (A) – (B)	110.00				

#### Water Balance: (Dry Season):

### b) Water Balance: (Wet Season):

Source of Use	WATER (CMD)			EFFLUI	ENT (CMD)
	Consumption	Losses	Additions	Domestic	Industrial
Domestic	5.0	1.00	0.00	4.00	
Industrial processing	30.0	1.00	+ 5.0 water of reaction		34
Cooling Water Make Up	48.00	24.00 evaporation	0.00		24.00
Boiler feed	48.0	34.0 Cond. Recycle - 8.0 from MEE to ETP	0.00		22.00
Gardening	0.00	0.0	0.00		
Total – (A)	131.00	53.00	5.00	3.00	80.00
Recycled from Condensate – (B)	26.00				-
Recycled from RWH	18.0				
Fresh Water requirement (A) – (B)	87.00				

# 2.3. EFFLUENT GENERATION AND TREATMENT

The table above indicates the quantities of domestic and industrial effluent from the proposed activity.

The high TDS stream will be segregated and evaporated in the Multiple Effect Evaporator. The concentrated salts will be separated in the centrifuge. The condensate of the Evaporator will be further treated in the conventional aerobic Effluent Treatment Plant.

The low TDS streams will be collected separately near their generation points from where they will be treated by primary physic-chemical processes of equalization /neutralization and sedimentation followed by secondary aerobic biological oxidation. The biologically treated effluent will be pumped to pressure sand filter for removing any fine solids which might have escaped settlement. The treated and filtered effluent will be passed through the Activated Carbon Filter for polishing and removing any refractory organics. The tertiary treated effluent complying MPCB consented standards will be disposed to CETP.

Domestic effluent will be treated in a septic tank followed by soak pit.

# 3. BASELINE ENVIRONMENT

Baseline environment incorporates the description of the various existing environmental settings within the area encompassed by a circle of 10 km radius around the proposed project site. Study of the area was done during winter season from November 2012 to

January 2013. All sample were analyzed at Goldfinch Engineering System Pvt. Ltd., MoEF approved lab.

Sr.	ir.		Water		Soil	Noise Level
No.	Name of Place		Surface	Ground	_ 5011	Ambient
1.	Jambivali Village	$\checkmark$			$\checkmark$	$\checkmark$
2.	Bohonoli village	$\checkmark$		$\checkmark$	$\checkmark$	$\checkmark$
3.	Chikloli village	$\checkmark$			$\checkmark$	$\checkmark$
4.	Pritam Hotel	$\checkmark$	$\checkmark$		$\checkmark$	$\checkmark$
5.	Belavali Village	$\checkmark$		$\checkmark$	$\checkmark$	$\checkmark$
6.	Manjarli Village	$\checkmark$		$\checkmark$	$\checkmark$	$\checkmark$
7.	Haji malang Village	$\checkmark$				$\checkmark$
8.	Shirgaon village	$\checkmark$			$\checkmark$	$\checkmark$
9.	Javsai village	$\checkmark$				$\checkmark$
10.	Barvi Dam		$\checkmark$			
11.	GIP Dam		$\checkmark$			
17	Chikaloli Dam Up		$\checkmark$			
12.	stream					
13	Chikaloli Dam down		$\checkmark$			
15.	stream					
14.	MIDC Site		$\checkmark$			
15.	Factory					
a.	Near Main Gate	$\checkmark$				$\checkmark$
b.	Near Boiler House	$\checkmark$			$\checkmark$	$\checkmark$
с.	Near ETP	$\checkmark$				$\checkmark$

# Sampling locations



# 3.1 CLIMATE

The climate of the district is distinctly different on the coastal plains and on the eastern slopes. Being fully tropical, the coastal strip including Thane, Vasai, Palghar and Dahanu tehsil is very humid and warm. On the other hand the climate on the eastern slopes and in the plains at the foot of the slopes is comparatively less humid. However variation in

temperature in the eastern region is more than that on the coastal strip. The maximum temperature lies between 28 °C -35.2 °C and the minimum temperature lies between 16.3 °C -26.5 °C.

#### Rainfall:

The district gets assured rainfall of 2000 to 4000 mm from the south west monsoons during the months June to September. Generally highest rainfall is recorded in the month of July it is considerably more in land than on the coast. It is also less towards the South. Wind speeds range from 5 to 15 kmph, the predominant direction being from West.

# 3.2 WATER & HYDROLOGY

#### **Rivers:**

The two main rivers, which join the sea on the west coast, are Vaitarna and Ulhas. The Vaitarna River rises in the hills near Trambak in the Nashik district and flowing southwards takes a Westwards turn entering Thane district at Vihigaon in Shahapur taluka/Tehsil. Surface and ground water (bore well water) were sampled at 3 stations respectively. 15 Parameters were monitored and found to be within the prescribed regulatory limits as per IS10500.

### **3.3 AIR ENVIRONMENT**

Air monitoring stations were selected based on the meteorological data available for this season. Monitoring done at project site and in the study area indicated that the maximum and minimum temperatures in the area were 34 °C and 18 °C, with humidity levels from 41.5% to 66.0% and wind speeds averaging 3.6 kmph predominantly from east.

#### **Existing Ambient Air Quality**

Ambient air was sampled at nine locations selected and each station was sampled for continuously 24 hrs. in each month. Parameters monitored were Particulate matter, NOx, SO2, Ambient air was found to be within the prescribed regulatory limits. Within study area the average Ambient air quality is shown below:

	November, 2012	December, 2012	January, 2013	CPCB Standards
ΡM 10(μg/m3)	46.58-67.9	53.31-67.14	47.50-63.54	100
PM 2.5	24.86-37.47	21.13-32.64	22.8-37.19	60

(µg/m3)				
SO2 (µg/m3)	11.88-24.6	15-29.88	17.7-27.68	80
NOx (µg/m3)	8.8-35.5	12.3-22.55	9.92-17.42	80

# 3.4 NOISE

Ambient Noise levels in the study area were recorded to be within the limits stipulated by regulatory limits. The equivalent Noise levels during day and night time within study area are shown below:

L <sub>eq</sub>	November,	December,	January,	CPCB
	2012	2012	2013	Standards
During Day time	52.5-54.8 dB(A)	51.8-54.7 dB(A)	51.8-53.3 dB(A)	55 dB(A)
During Night	42.8-49.6	42.3-49.1	41.5-48.7	45 dB(A)
time	dB(A)	dB(A)	dB(A)	

# 3.5 PHYSIOGRAPHY AND SOIL

# **Topography:**

The district is divided into three parts on the basis of its topography

- The eastern portion having Sahyadri ranges and their slope is mainly forest area.
- The central region covering mostly paddy fields and
- Western part along the west coast, where horticulture cultivation of high quality fodders and vegetables are agricultural practices.

# Hills:

The Sahyadri ranges having unbroken boundary run North South in the Eastern region of the district. There are also spurs running laterally to the main ranges. The heights of the mountains are maximum on the east and diminish gradually westwards. The mountain ranges also spread unevenly in the central region of the district. Yeoor hills or Mama-Bhanja hills is a hill station in the Thane district. The naturally beautiful and pollution free area attracts lot of people.

# Soils:

The soils of Thane district can be conveniently divides into three categories,

- 1) Black soil containing sand
- 2) Red soil in the Eastern region mostly on the slopes and
- 3) Brownish black soil in the patches of the valleys mostly lying between the coastal plains and hilly slopes of Sahyadri.

The first type of soil, which is found in Dahanu, Palghar, Vasai and Thane tehsil, is fertile and useful for horticulture, Paddy cultivation and vegetables.

#### 3.6 FLORA & FAUNA

Field survey was planned and undertaken by the M/s Ecobasics (agency appointed by Goldfinch) after making a preliminary visit to the proposed site. Data were collected on flora (Herbs, Shrubs and Trees) and fauna (Birds, Insects, Spiders, Reptiles, and Mammals).

The flora found in the study area is rich in Nilgiri, Kaduneem, Gulmohar, Bahava, saptparni trees, various fruit giving flora such as Kaju, Phanas, and Mango. Some of the flowery plants were also found in the study area.

The region is having variety of birds and insects species. Few numbers of amphibians and reptiles also occur in this region. Butterflies and dragonflies are also common in the study area.

Vegetation diversity status of the site: Near the site the vegetation is dominated by avenue tree species.

Faunal ecological and biodiversity status of the site: Characteristic of industrial habitat. No rare, endangered or legally protected species were found in 1 km range from the project site.

Ecological richness and value of the actual project site location: Very low.

Ecological richness of areas within 10 km range: Ecologically rich and fragmented areas.

National parks and sanctuaries within 10 km: None.

Ecologically rich areas within 10km: Kodeshwar, Morbe, Haji Malang gad are ecologically valuable areas. All of these areas are 8-10 km away from the project site and there is no chance of these getting affected by the proposed activity.

# 3.7 DEMOGRAPHIC AND SOCIO-ECONOMIC PROFILE

#### 3.7.1 Population

Ambernath has a population 203,795 as per census data and projection of which 53% are Males and 47% females.

#### 3.7.2 Literacy

Ambernath has an average literacy rate of 73%, higher than the national average of 59.5%; with 57% of the males and 43% of females literate.

# 3.8 PUBLIC AMENITIES

# 3.8.1 Water Supply

The MIDC has made its own arrangements to supply filtered and disinfected water to the industrial units. Water that is lifted from rivers Ulhas and Barvi via Jack well is brought to the

water treatment plant in the area. a) Source: Barvi dam (Jambhul water works) b) Capacity: 8.00 MLD. Present capacity of this scheme is 3.5 million liters of water per day.

# 3.8.2 Transportation

MIDC has provided asphalt roads with width varying from 3.75 to 16m; these are mainly two lane roads with a central verge of bougainvillea and raised footpaths on either side of the roads.

### 3.8.3 Streetlights

The MIDC has provided street lighting facility in the area, street lights have been erected 30 m apart on the central verge. A total of 650 lights illuminate the industrial area at night.

# 3.8.4 Common Facility Centre

This industrial area has branches of Rotary and Lions clubs, and also good hotels and guest houses, which offer modern accommodation facilities. There are tourist places like Barvi dam, Birla temple, Durgadi fort, etc and pilgrimage centers like Shri Malang Gadh, Shiv Mandir (Ambernath).

### 3.8.5 Banks

There are full-fledged branches of most of the nationalized as well as co-operative banks in Ambernath city.

# 3.8.6 Education Centers

Skilled manpower and labour are easily available. There are a number of secondary and higher secondary, technical engineering, management, and computer training institutes in Ambernath, Badlapur, Kalyan, Dombivali , which make the each city in the vicinity self-sufficient in the field of education.

# 3.8.7 Fire Station

A fire station is necessary keeping in mind safety of the planned development of the additional Ambernath Industrial Area. MIDC has constructed a fire station in an area of 3,600 sq. m and which has the following units. i) Engine room with a fire station office ii) Officers' quarters, iii) Fireman quarters, iv) Smoke room tower, v) Service pit and suction tank.

# 3.8.8 Electricity

The MSEDCL, with its capacity of 220 MVA, supplies power to all industrial units in this area.

#### 3.8.9 Residential Facilities

Additional Ambernath Industrial Area is located near the Ambernath industrial area and 7 km from Ambernath city, hence residential facilities are also at hand.

# 3.8.10 Connectivity

Fax, telex, email and internet facilities are available. A telephone exchange is also available in the city.

# 3.9 Additional Studies

A detailed Quantitative Risk Analysis has been done by an expert considering the hazard identification of various hazardous chemicals and solvents being handled and stored based on the relative ranking technique by MOND INDEX assessment. Fire and Explosion hazard was also assessed by DOW's F&E Index. Hazop study was also carried out with environmental issues as the thrust area covering 9 nodes of the major hazardous reactions in the proposed product list. Impact assessment about the exposure to heat, overpressure and toxic effects was done based on consequence analysis and mitigation measures were recommended with a Disaster Management Plan. The reports on the same are available separately.

#### 4. ENVIRONMENTAL IMPACTS

## 4.1 Ambient air

The source of Air emission would be various process emissions from plant. The flue gas emission from boiler will be released through stack with adequate height and process emissions through scrubbers.

Combined values of base line and project concentration of PM 10 is 67.9, SOx 29.88, and NOx 35.5  $\mu$ g/m3. The maximum values of the air emission in the area are within the NAAQS standards.

Air pollution estimation is done for worst condition of APC not working and no plume rise existing.

- GLC of PM<sub>10</sub> for villages in 10 km radius: The total concentration of PM<sub>10</sub> from the Plant emission is in the range of 56.63 to 71.48 ug/m<sup>3</sup>.
  All these values are less than the AAQS for PM<sub>10</sub> of 100 ug/m<sup>3</sup>
- GLC of PM<sub>2.5</sub> for villages in 10 km radius : The total concentration of PM<sub>2.5</sub> from the Plant emission is in the range of 26.49 to 43.48 ug/m<sup>3</sup>
  All these values are less than the AAQS for PM<sub>2.5</sub> of 60 ug/m<sup>3</sup>.
- **GLC of SO<sub>2</sub> for villages in 10 km radius:** The total concentration of SO<sub>2</sub> from the Plant emission is in the range of 18.64 to 44.24 ug/m<sup>3</sup>. All these values are less than the AAQS for SO<sub>2</sub> of 80 ug/m<sup>3</sup>.
- **GLC of NO<sub>x</sub> for villages in 10 km radius** As the emission rate of NO<sub>x</sub> is less than  $SO_2$  the GLC values at all villages within 10 km. radius shall be less than AAQS for  $NO_x$  of 80 ug/m<sup>3</sup>.
- In addition, air pollution control equipment in the form of Multi cyclone with particulate matter removal efficiency of 60 % shall be installed to bring down the PM emission levels well below the AAQS.

Therefore there shall not be any adverse impact on air environment due to the emissions from the industry.

# 4.2 Water Requirement

Water requirement will met by supply from MIDC, Ambernath. The quantity of water required is to the tune of 110.0 m3 per day (Dry Season) 105.0 m3 per day (wet season). The domestic waste water will be treated in the septic tank followed by soak pits.

# 4.3 Noise levels

• The noise levels will be below MPCB prescribed limits. All operating personnel are well acquainted with their respective operations and personnel protection equipment's will be provided to the operators in utility area.

- In house monitoring will be done regularly inside and outside the factory. The noise levels will always be within Maharashtra Pollution Control Board limits for industrial activity and ASolution will ensure 100% compliance record.
- Proper noise barriers, acoustic enclosures will be provided on noise generating equipment's like D G sets and cooling towers to minimize noise.

### 4.4 Soil / Land quality

The project proponents will take all the precautions to make its solid waste areas impervious to water and leachate migration. This will avoid soil contamination. It follows that soil quality will not be adversely impacted by proposed production activity. The unit set up is in industrial area hence no change in land use.

### **4.5 BIOLOGICAL ENVIRONMENT**

### Suggested Mitigation Measures

- > Waste water will be treated as per MPCB guidelines before discharged to CETP.
- The air emissions will follow strict guidelines of MPCB so as not to cause negative impacts on the epiphytic species in the forest like areas.
- Fencing will be erected to exclude any possible conflict with any wildlife from the buffer area.
- > The plantation in the project location will comprise species as per CPCB guidelines.
- Create native species dominated green belt and gardens to enhance bird life in the campus.
- Erect bird boxes on mature standard trees at a density of 10 per hectare. A variety of boxes should be used in order to encourage diversity of species.

# 4.6 SOCIO ECONOMIC IMPACT

There is no negative impacts due to the operations of the company; no mitigation measures are recommended. However, the company being at the start up stage, and that the CSR policy has yet to be finalized; can consider some suggestions that are presented here. These suggestions will help the company to-

- Establish its identity
- To gain support from the people.
- To gain goodwill for the company.

The CSR policy of the company needs to be comprehensive to deal with the various issues that concern the welfare of the local people. The interventions can be divided into two main categories-

- a) Employee Wellbeing
- b) Community Development

Under each category the company can choose focus areas like healthcare, education, infrastructure development, livelihood and skill building, women empowerment, child care, intervention for senior citizens, environment sanitation, etc. The interventions under employee wellbeing need to be congruent with the HR policies and programmes of the company. The community development activities can be undertaken in association with other companies as the beneficiary group is similar. This will avoid duplication of interventions and will ensure the initiatives benefit the target populations and no local group is seeking undue gains from these initiatives. Taking cues from the challenges mentioned in the report; the company can begin a mobile clinic service to the surrounding villages. This will help the local people stay healthy and will help to gain local support. The company can undertake infrastructure projects in selected wadi or villages. Thakurpada; close to the company needs better roads and street lights.

To begin with the company can conduct a rapid needs assessment in the community. This will help to establish an identity among the people and gain their support. The participation of the people from the beginning will ensure greater sustainability of the efforts.

#### 5.0 ENVIRONMENTAL MANAGEMENT PLAN

An environmental management plan has been proposed to implement the mitigation measures. The plan will ensure that the adverse environmental impacts are minimized and the beneficial impacts are maximized.

# 5.1 Cooling tower and boiler

10 cooling towers with a circulation capacity 175 m3/hr. each will be required for the proposed project. 24 m3/day will be the expected blow down generated and will be taken to ETP.

#### 5.2 Domestic sewage

The sewage will be treated in the Septic tanks. The overflow of the septic tanks will be pumped in the bioreactor of ETP.

# 5.3 Industrial effluent

Effluent generation from the proposed project is 80 KLD industrial and 3 KLD domestic. It will be given primary, secondary and tertiary treatment in the 100 KLD ETP before discharge to CETP.

#### 5.4 Air Pollution Management

The source of emission i.e. Flue Gas Emission is from industrial Boiler. The Flue gas emission will be released through fiber glass filter bags to contain particulate matter and then stack having adequate stack height. The process emission from the reaction vessel of the main tanks will be taken to the scrubber before releasing it to the atmosphere.

#### 5.5 Solid and Hazardous waste management

The Hazardous Wastes generated will be sent for further treatment and disposal to CHWTSDF, Mumbai Waste Management, Taloja & or sale to authorized recycler.

# 5.6 Green Belt development

Green Belt development within the project premises is planned on 945 sq. m area. About 100 trees and shrubs of local variety will be planted. This will reduce noise levels and dust levels by acting as a barrier between the outside environment and the inside environment of the premises.

### 5.7 Monitoring schedule

A detailed monitoring schedule has been prepared to ensure effectiveness of the environmental management plan.

# 5.8 Project cost and Expenditure for environmental activities

The total estimated gross capital investment is approximately Rs. 75.0 crores only. The break up is as follows:

Sr. no	Description of assets	Amount in Rs. cores
1.	Land	Rs. 1.80
2.	Building	Rs. 35.00
3.	Plant & Machinery	Rs. 30.00
4	Furniture's and Fixtures	Rs. 8.20
	Total	Rs. 75.00 Crores

#### Cost of EMP

S. No.	Particulars	Capital cost (in lacs)	Recurring cost (in lacs/annum)
1	Air pollution control		
	Fuel burning Stack/chimneys	7.00	1.0
	Multicyclone / Dust Collector /	6.00	5.0
	Bag Filter		
	Scrubbers	10.0	5.0
2	Water Pollution control		
	Process drains to ETP	10.0	0.1
	ETP	250.0	100.0
	RWH	5.0	0.50
	Waste minimization by effluent recycle	10.0	8.0
3	Noise pollution control		
	Acoustic encl./ Ant vibration	10.0	2.0
	pads		
4	Env. Monitoring and	0	5.0
	management		
5	Occupational health		
	Medical checkup	NIL	0.5
	Health insurance policy	NIL	2.5
	Medical staff charges	5.0	1.0
	First aid facilities consumables	2.0	0.50
	In-house first aid room	1.0	0.50
	Other infrastructure and	5.0	0.5
	Equipment		
6	Green belt	6.0	2.0
7	Non-hazardous & Hazardous Waste Disposal	5.0	2.0
R	Hazardous waste storage	5.0	0.50
0	(Fly Ash Storage)		
	Total	337.0	136.6

#### 6.0 CONCLUSION

It can be concluded that proposed project activity of ASolution Pharmaceuticals Ltd. is in the interest of common man, the society, the state and as the country as a whole.

- 1. The proposed project would provide a quality drugs product at lower cost to the users.
- 2. There would be considerable saving in energy resources on account of transportation these drugs and formulations.
- Socio-economic benefits due to creation of direct/indirect employment. 60 Staff and 100 work men will be recruited. Moreover due to project other direct and indirect business will be benefited.
- 4. Country will save valuable foreign exchange as import of these drugs will reduce by corresponding amount.
- 5. These drugs also have export potential. Hence possibility of earning foreign exchange.
- 6. The Flue gas emission from boiler will be left out through stack. The stack with adequate height as per CPCB norms will be provided.
- 7. Industrial waste water will be treated by ETP within the premises. The domestic waste water generated is being treated in scientifically designed septic tanks. The overflow of the septic tank will be pumped to the bioreactor. The treated waste water complying MPCB standards will be finally discharged to CETP.
- 8. The noise generation will be reduced due to the measure provided in Environmental Management Plan.
- 9. The risk associated is identified by conducting risk assessment, HAZOP and recommendations of the same will be implemented. Moreover on site emergency plan will be prepared to tackle the emergency when it arises.

Thus it can be concluded on a positive note that after the implementation of the mitigation measures and Environmental Management Plan the normal operation of M/s ASolution Pharmaceuticals Pvt. Ltd. will have negligible impact on environment and will benefit the local people.