

EXECUTIVE SUMMARY

For

PROPOSED EXPANSION OF EXISTING PRODUCT CAPACITIES AND ADDITION OF NEW PRODUCTS MANUFACTURING OF API, API/CHEMICAL INTERMEDIATES AND COVID API LOCATED AT SURVEY NO.155, VILLAGE - AMBHORA, TAL.- ASHTI, DIST. – BEED, MAHARASHTRA – 414202

Terms of Reference File No. IA-J-11011/71/2022-IA-II(I), dated 4th March, 2022

Category A, Schedule 5(f) Synthetic Organic Chemicals Industry

Baseline Period: Winter Season December 2021 to February 2022 (01.12.2021 to 28.02.2022)

Project Proponent



M/s. Canpex Chemicals Pvt. Ltd.

Environmental Consultant



M/s Anacon Laboratories Pvt. Ltd., Nagpur

QCI-NABET Accredited EIA Consultant for Sector 21 5(f) Synthetic Organic Chemicals Industry

MoEF&CC (GOI) and NABL Recognized Laboratory

ISO 9001:2015, ISO 14001:2015, ISO 45001:2018

Lab. & Consultancy: FP-34, 35, Food Park,

MIDC, Butibori, Nagpur – 441122

Mob: +91-9372960077

Email: ngp@anacon.in

Website: www.anaconlaboratories.com

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EXECUTIVE SUMMARY

1.0 INTRODUCTION

M/s. Canpex Chemicals Pvt. Ltd. (here after referred as CCPL) got first CTO in 2002 and renewed regularly. Now they have Proposed expansion of existing product capacities and addition of new products for manufacturing of API, API/Chemical Intermediates and Covid API located at Survey No.155, Ambhora Village, Tal.- Ashti, Dist.- Beed - 414202 (Maharashtra) by M/s. Canpex Chemicals Pvt. Ltd.

CCPL is the flagship company and is one of the largest manufacturer of Guanidine Nitrate having production capacity of 4,800 TPA. This product is mainly exported to South Africa, Belgium, Japan and South Korea.

TOR was granted to the proposed expansion project from EAC (Industry – III), MoEF&CC, New Delhi, Vide letter No. IA-J-11011/71/2022-IA-II (I) on dated 4th March 2022. ToR compliance with cross referencing is provided in the beginning of the chapter scheme.

Existing plant has obtained Consent To Establishment (CTE) and Consent To Operate (CTO) under Air Act, Water Act and Hazardous waste Management Rule by MPCB. Existing CTO (vide letter no. Red/MSI Consent Order No.:- BO/AST/RO- AD/UAN No.- 0000057782/R/CC-1902000990 dtd. 21/02/2019) is valid up to 31/10/2023.

Anacon Laboratories Pvt. Ltd., Nagpur, is QCI-NABET accredited in 'Category A' environment consultant organization has been assigned to undertake an Environmental Impact Assessment (EIA) study and preparation of Environment Management Plan (EMP) for various environmental components, which may be affected due to the impacts arising out of the proposed project.

The Environmental Impact Assessment (EIA) and Environment Management Plan report is prepared for obtaining Environmental Clearance (EC) from MoEF&CC, New Delhi and the Consent for Establishment from the MPCB for the proposed expansion project.

The draft report is submitted for public hearing as per the EIA Notification (dated 14th September 2006) and subsequent amendment thereof. The final report will be upgraded after public hearing.

1.1 Identification of Project

M/s. Canpex Chemicals Pvt. Ltd., are in the manufacturing of Guanidine Nitrate (GN) and Hydrogen Cyanamide 50 % Solution (H_2CN_2) since last 3 decades. Canpex is the pioneers in Guanidine and Cyanamide chemistry in India. In India, there is only one other small manufacturer of GN and few small manufacturers for H_2CN_2 . We are supplying to various industries like Pharmaceuticals, Chemicals, dyes etc., and also proud supplier to our Indian defense sector for the last 3 decades. M/s. CCPL has proposed expansion of existing product capacities and addition of new products for manufacturing of API, API/Chemical Intermediates and Covid API; Total API and API/Chemical Intermediates 700 TPM + Covid API 13 TPM Total = 713 TPM, and By-product 87.40 TPM.

**TABLE 1
EXISTING AND PROPOSED EXPANSION PRODUCTION CAPACITY**

| Sl. | Product | Existing (TPM) | Proposed (TPM) | Total after expansion (TPM) | Application |
|---|---|----------------|---------------------|-----------------------------|--|
| Existing products (API /Chemical Intermediates) | | | | | |
| 1. | Guanidine Nitrate 98 % | 400 | -(200) Reduction | 200 | Used in API/ Chemical like Nitroguanidine, Acyclovir, Abacavir, Trimethoprim |
| 2. | 50% Hydrogen Cyanamide solution | 60 | 240 | 300 | Used in Albendazole (anti-anthelmintic), imatinib mesalyate (anti- cancer), etc. |
| Proposed New Products (API / Chemical & Intermediates) | | | | | |
| 3. | Guanine | 0 | 80 | 80 | Used in API Acyclovir (anti – viral) |
| 4. | Acyclovir | 0 | 30 | 30 | API anti -viral |
| 5. | N-(2-Amino-4,6-Dichloro-5- Pyrimidinyl)-Formamide (FADCP) | 0 | 20 | 20 | Used in API Abacavir (Anti-HIV) |
| 6. | Guanidine Carbonate | 0 | 30 | 30 | Used in pemetrexed, trimethoprim, eprizole, etc |
| 7. | Guanidine Hydrochloride | 0 | 20 | 20 | Used in pemetrexed, trimethoprim, eprizole, etc |
| 8. | Dodecyl Guanidine Acetate Crude 95 % | 0 | 20 | 20 | Used in pemetrexed, trimethoprim, eprizole, etc |
| Proposed New Products (Covid API) | | | | | |
| 9. | Favipiravir | 0 | 5 | 5 | API-Antiviral |
| 10. | Dexamethasone | 0 | 3 | 3 | API-Antiviral |
| 11. | Molnupiravir | 0 | 5 | 5 | API-Antiviral |
| Total | | 460 | 453 | 713 | Total API and API / Chemical Intermediates 700 TPM + Covid API 13 TPM Total = 713 TPM |

1.2 Location of the Project

The proposed expansion plant is located at Survey No. 155, Village - Ambhora, Tehsil - Ashti, District-Beed, Pin Code - 414 202, State - Maharashtra. The nearest city is Ahmednagar which is around 25.5 km in North West direction. Nearest airport is Aurangabad Airport which is around 106 km at South East direction. The nearest habitation is Ambhora Village which is 1.3 km at East direction from the project site. The nearest roadway is SH 142 – 1.1 km in West North West Direction, SH 2 North direction. The nearest railway station is Narayan Doho Railway Station which is 17.2 km in the West North West direction.

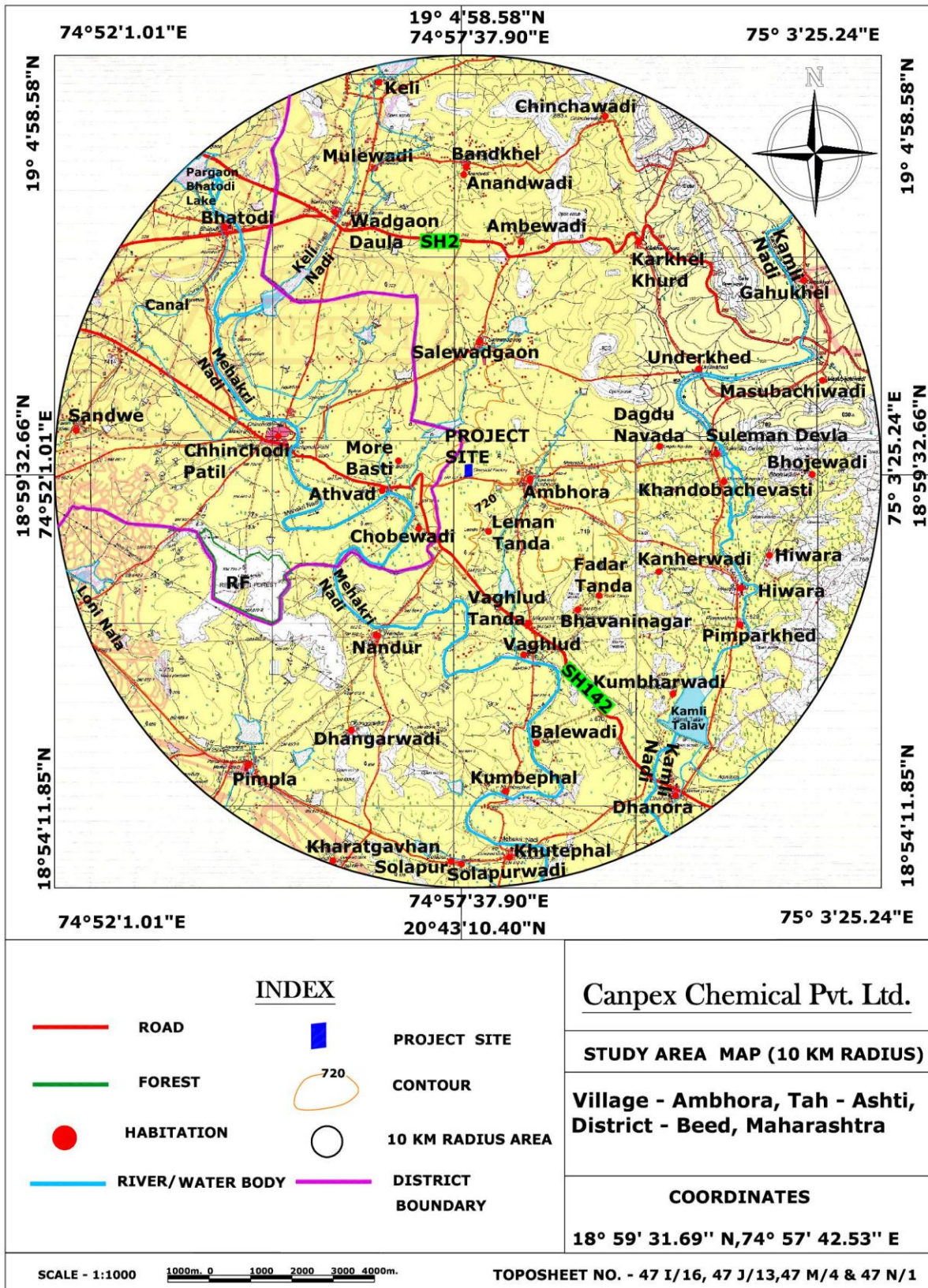


FIGURE 1: STUDY AREA (10 KM RADIAL DISTANCE)

**TABLE 2
ENVIRONMENTAL SETTING OF THE SITE**

| Sl. | Particulars | Name | Distance (KM) | Direction |
|-----|---|--|---------------|-----------|
| 1. | Project location | Survey No. 155, Village - Ambhora, Tehsil - Ashti, District - Beed, Pin Code - 414 202, State - Maharashtra.. Area - 3.9695 Ha. | | |
| 2. | Geo-coordinates | Latitude: 18 ⁰ 59'31.69' N Longitude: 74 ⁰ 57'42.53' E | | |
| 3. | Toposheet No. | 47 I/16, 47 J/13,47 M/4 & 47 N/1 | | |
| 4. | Nearest River/water Body | Mehekri Nadi | 1.5 | SW |
| | | Kamli Talav | 7.4 | SE |
| | | Kamli Nadi | 6.0 | E |
| | | Loni Nala | 9.5 | WSW |
| 5. | Nearest Lake/Dam | Kapurwadi Lake | 23 | NW |
| | | Dadegaon Lake | 13 | E |
| | | Seena Dam, Nimgaon Bodkha | 17.6 | SSW |
| | | Mehakari Dharan | 13.7 | SSE |
| | | Devinimgaon Dam | 16.5 | SE |
| | | Pargaon Bhatodi Lake | 9.5 | NW |
| 6. | Nearest state/National Boundaries | Karnataka | 183 | SE |
| 7. | Distance for sea coast | Arabian Sea | 217 | W |
| 8. | Nearest Reserved/Protected forests | Reserved Forest | 4.8 | SW |
| 9. | Nearest Industries | 1.Vaibhav Solar Power Industries | 23 | SW |
| | | 2.Yashwant Forging Pvt. Ltd. | 2.9 | SW |
| 10. | Nearest Air Port | Shirdi International Airport | 97.6 | NNW |
| | | Aurangabad Airport | 106 | SE |
| 11. | Nearest village/major town | Ambhora | 1.3 | E |
| 12. | Nearest Port | Jawaharlal Nehru Port Trust | 212 | W |
| 13. | Nearest city | Ahmednagar | 25.5 | NW |
| 14. | Nearest major city with 2,00,000 population | Ahmednagar | 25.5 | NW |
| 15. | Site elevation above Mean Sea Level | 723 - 727 m. | | |
| 16. | District Headquarters | Beed | 80.0 | E |
| 17. | Nearest Railway Station | Narayan Doho Rly Station | 17.2 | WNW |
| 18. | Nearest Road/Highway | SH2 | 5.7 | N |
| | | SH 142 | 1.1 | WNW |
| 19. | Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, Universities, Community Hall etc.) Schools | ZPCP School Ambhora | 1.4 | E |
| | | Ambeshwar Madhymik Vidhyalay Ambhora | 1.8 | ESE |
| | | Janata Junior College Dhanora | 9.5 | SE |
| | | Dhanora Collage | 9.2 | SE |
| | | Noble Public English school, Chichondi Patil | 4.4 | W |
| | | Z P P School Chichondi Patil, Chichondi Patil | 4.5 | WNW |
| | | New English School Chichondi Patil | 5.0 | WNW |
| | | ZP School - Karkhel Kh | 7.2 | NE |
| 20. | Hospitals | Village Hospital, chinchodi patil | 3.5 | WNW |
| | | Gurudatta Hospital -Dhanora | 9.0 | SE |
| | | Jivan Hospital - Dhanora | 9.4 | SE |
| 21. | Community hall | Karkhel khurd - Village hall | 7.1 | NE |
| | | Kakadwadi - Village hall | 10.0 | SSW |
| 22. | Places of worship | Nrusinha Temple, Bhatodi | 8.9 | NW |
| | | Ambeshwar Mandir, Ambhora | 1.4 | E |
| | | Rodagiri Baba, Hivara | 9.1 | ESE |
| | | Shivkalin Ganesh Mandir, | 8.0 | ENE |

| SI. | Particulars | Name | Distance (KM) | Direction |
|-----|-----------------------------------|----------------------------------|---------------|-----------|
| | | Gahukhel | | |
| | | Nurani Masjid, Hivra | 7.0 | SE |
| | | Vitthal Mandir, Nandur | 4.7 | SW |
| | | Gorakhnath Math, Sandve | 9.7 | WNW |
| | | Jagdamba mata mandir, Lamantanda | 4.1 | SE |
| | | Vithoba-Rukhmai Temple, Hivra | 7.1 | SE |
| 23. | Archaeologically important places | Daulawadgaon Fort | 7.2 | NNW |
| | | Nizamshahi Mahal | 7.1 | NW |
| | | Farah Bagh, Ahmednagar | 23.0 | WNW |
| | | Cavalry Tank Museum, Ahmednagar | 23.8 | WNW |
| | | Sharifji Raje Bhosale Monument | 8.5 | NW |
| 24. | Seismic Zone | Seismic Hazard Zone-III | | |
| 25. | Nearest tourist places | SKT wind Mills, Kolhewadi | 15.3 | NW |
| | | Karanji Ghat Nagar, Shevgaon | 14.8 | NNE |
| | | Deshmukhachi Gadhi - Kada | 16.1 | SE |
| | | Farah Bagh, Ahmednagar | 23.0 | WNW |
| | | Cavalry Tank Museum, Ahmednagar | 23.8 | WNW |

1.3 EIA/ EMP Report

As per Standard ToR obtained from EAC (Industry – III), MoEF&CC, New Delhi, baseline environmental monitoring was already conducted during Winter - Season (1st December 2021 – 28th February 2022) for determining the status of ambient air quality, ambient noise levels, surface and groundwater quality, soil quality, status of flora, fauna and eco-sensitive areas and socio-economic status of the villages within 10 km radius study area from the project site (Figure 1). The observations of the studies are incorporated in the EIA/EMP report. Impacts of the project activities during construction and operation stages were identified and duly addressed in the EIA - EMP report.

EIA - EMP report along with the proposed management plan to control/ mitigate the impacts. Environmental Management Plan is suggested to implement the pollution control in the project.

REGULATORY FRAMEWORK

| Sr. No. | Particulars | Reference and Date |
|---------|--|---|
| 1. | Application submitted for Proposed project | Online Proposal No. IA/MH/IND3/257357/2022 dated 23-2-2022 |
| 2. | ToR Presentation before EAC, Industry-III | Standard TOR Issued |
| 3. | Grant of ToR | 4 th March 2022 |
| 4. | Baseline Data Generation | Winter Season (1 st December 2021 to 28 February 2022) |

2.0 PROJECT DESCRIPTION

2.1 Type of Project

Proposed expansion of existing product capacities and addition of new products for manufacturing of API, API/Chemical Intermediates and Covid API.

According to the EIA Notification 2006 and its subsequent amendments, the project comes under the project activity of 5(f), Synthetic Organic Chemicals Industry. The overall project activity falls under "Category A".

2.2 Process Description

The proposal is for expansion of existing product capacities and addition of new products manufacturing of API, API/Chemical Intermediates and COVID API.

1. Existing API/Chemical Intermediates

- a) Guanidine Nitrate : 200 TPM 98 % Guanidine Nitrate will be Used in API/ Chemical like Nitroguanidine, Acyclovir, Abacavir, Trimethoprim
- b) Hydrogen Cyanamide solution : 300 TPM 50% Hydrogen Cyanamide solution will be Used in Albendazole (anti-anthelmintic), imatinib mesalyate (anti- cancer), etc.

2. Proposed New Products (API / Chemical & Intermediates)

- a) Guanine : 80 TPM Guanine will be used in API Acyclovir (anti – viral).
- b) Acyclovir : 30 TPM Acyclovir will be used in API anti –viral
- c) N-(2-Amino-4,6-Dichloro-5- Pyrimidinyl)-Formamide (FADCP) : 20 TPM will be used in API Abacavir (Anti- HIV)
- d) Guanidine Carbonate : 30 TPM Guanidine Carbonate will be used in pemetrexed, trimethoprim, eprizole, etc.
- e) Guanidine Hydrochloride : 20 TPM Guanidine Hydrochloride will be used in pemetrexed, trimethoprim, eprizole, etc.
- f) Dodecyl Guanidine Acetate Crude 95 % : 20 TPM will be used in pemetrexed, trimethoprim, eprizole, etc.

3. Proposed New Products (Covid API)

- a) Favipiravir – 5 TPM Favipiravir will be manufactured and used as Covid Antiviral.
- b) Dexamethasone – 3 TPM Dexamethasone will be manufactured and used as Covid Antiviral.
- c) Molnupiravir – 5 TPM Molnupiravir will be manufactured and used as Covid Antiviral.

2.3 Land Requirement

Total plot area 39695 Sq. M. (3.9695 ha), Existing land area utilized by the unit is 27449 Sq. M. proposed area will increase by 12246 Sq. M. Built Up Area – 0.7129 Ha., Calcium Carbonate Landfill area – 0.2515 Ha., Road and Paved area – 0.7848 Ha., Parking area-0.4007 Ha, Open area 0.5023 Ha, Green Belt area – 1.3173 Ha. i. e. 33.2% (Existing 0.7503 Ha. & proposed greenbelt area will be 0.5670 Ha). Land use of 3.9695 Ha. is diverted for Industrial purposes which will be used for implementation of industrial activity.

**TABLE 3
AREA STATEMENT**

| Sr. No | Particular | Ground Area in Sq. M. | | | % of Total Area |
|--------------|------------------------------|-----------------------|--------------|--------------|-----------------|
| | | Existing | Proposed | Total | |
| 1 | Mfg. Plant-1 | 351 | 0 | 351 | 0.9 |
| 2 | Mfg. Plant-2 | 300 | 0 | 300 | 0.8 |
| 3 | Mfg. Plant-3 | 0 | 828 | 828 | 2.1 |
| 4 | Godowns | 821 | 384 | 1205 | 3.0 |
| 5 | Engg workshop, DG & Panel | 234 | 234 | 468 | 1.2 |
| 6 | Boiler House | 96 | 94 | 190 | 0.5 |
| 7 | Coal & Ash Yard | 356 | 0 | 356 | 0.9 |
| 8 | Utilities section | 220 | 216 | 436 | 1.1 |
| 9 | Tank Farm-1 | 396 | 0 | 396 | 1.0 |
| 10 | Solvents Storage Area | 0 | 420 | 420 | 1.1 |
| 11 | Tank Farm-2 | 0 | 370 | 370 | 0.9 |
| 12 | Cal. Carbonate Landfill Area | 2515 | 0 | 2515 | 6.3 |
| 12 | QC and R & D lab. | 119 | 0 | 119 | 0.3 |
| 13 | Facility for Workers | 72 | 90 | 162 | 0.4 |
| 14 | Admin and other buildings | 758 | 0 | 758 | 1.9 |
| 15 | ETP | 330 | 440 | 770 | 1.9 |
| 16 | Total Green Belt Area | 7503 | 5670 | 13173 | 33.2 |
| 17 | Parking Area | 507 | 3500 | 4007 | 10.1 |
| 18 | Area occupied by Road | 7848 | 0 | 7848 | 19.8 |
| 19 | Balance Open Area | 5023 | 0 | 5023 | 12.6 |
| Total | | 27449 | 12246 | 39695 | 100.0 |

2.4 Raw Materials Requirement, Source & Mode of Transport

Overall 1479140 kg/month materials will be transported through road (considering 300 working days) for the plant. Thus, around 6 trips per day i.e. 12 trucks per day will be required to transport the materials by road with the capacity of each truck 21 Tons is being considered.

2.5 Solid and Hazardous waste generation

The total estimated solid waste generation will be 600 TPA Coal Ash, 6876 TPA Calcium Carbonate. Hazardous waste in the form of 1397 TPA Process residue/waste, 28 TPA Spent carbon from process, 700 Kg/A Date of expired products, 7700 Nos./A Discarded containers/barrels/liners, 181.8 TPA Chemical sludge from waste water treatment, 2925 TPA MEE salts, 30MT/A Spent Carbon from ETP will generate. It will be disposed off to CHWTSDF/sale to authorized recycler. 12.3 MT/A domestic waste will be sent to authorized recycler.

2.6 Water Requirement, Source and Wastewater Generation

Requirement: 293.5 KLD (Industrial Process & other 283.0 + Domestic purpose 10.5)

Remarks – Day 1 inlet water is 293.5 KLD and daily make up = 192.5 KLPD.

(Net fresh water requirement per day 293.5 - 101 (recycled water) = 192.5 KLD)

Source: Water for existing plant is supplied from Shet Talao. After expansion Ground water will be the source for plant activity. Required permission and NOC will be obtained from Central Ground water Board and State Government.

**Wastewater generation:**

Total wastewater generation after expansion: 110.1 KLD.

Out of total 110.1 KLD effluent, 101 KLD waste water will be recycled,

Fresh water requirement after expansion = 192.50 KLD.

Industrial effluent will be treated in ETP of capacity 125 KLD. Domestic waste water: 8.50 KLD will be treated in STP of 10 KLD and will be used for gardening.

2.7 Power Requirement and Supply

Total power requirement after expansion is estimated to be 1125 kW (existing 483 kW, proposed 642 kW) and will be sourced from Maharashtra State Electricity Distribution Company Limited (MSEDCL). In addition to this, one DG set having capacity 125 kVA is available at site and 1 DG set of 1000 kVA capacity is proposed and will be available as standby.

2.8 Manpower Requirement

At present existing manpower is 80, proposed 125 and after expansion manpower will be 205 Preference will be given to local people, depending upon their qualification and skill.

2.9 Fire Fighting Facilities

In order to combat any occurrence of fire in plant premises, a central firefighting facility is proposed which will have access to various units of the plant. In addition to this, all plant units, office buildings, laboratories, etc. will be provided with adequate number of portable fire extinguishers to be used as first aid fire appliances. The details of available firefighting facilities are provided in **Chapter 7**.

2.10 Project Cost

Existing project cost of the project is Rs.14.77 Crores. Additional cost for expansion will be Rs. 24 Crores. Thus, total project cost after expansion will be **Rs. 38.77 Crores**.

3.0 EXISTING ENVIRONMENTAL SCENARIO**3.1 Baseline Environmental Studies**

Baseline environmental studies were conducted at project site along with 10 km radial distance from the project site. The baseline environmental quality data for various components of environment, viz. Air, Noise, Water, and Land were monitored during Winter-Season (1st December 2021 – 28th February 2022)

3.2 Meteorology & Ambient Air Quality**Summary of the Meteorological Data generated at site (1st December 2021 – 28th February 2022)**

| Predominant Wind Direction | Winter season |
|-----------------------------------|---------------|
| First Predominant Wind Direction | NE (14.53%) |
| Second Predominant Wind Direction | NNE (12.96%) |
| Calm conditions (%) | 1.63 |
| Avg. Wind Speed (m/s) | 2.74 |

The status of ambient air quality within the study area was monitored for Winter Season of the year 2022 at 8 locations covering project site. The levels of Respirable Particulate Matter (PM₁₀), Fine Particulates (PM_{2.5}), Sulphur Dioxide (SO₂), Oxides of Nitrogen (NO_x) and carbon monoxide (CO),

Ammonia and Ozone were monitored. The details of Ambient Air Quality Monitoring Results are summarized and given in **Table 4**.

**TABLE 4
SUMMARY OF AMBIENT AIR QUALITY RESULTS**

| Sr. No. | Location | | PM ₁₀ | PM _{2.5} | SO ₂ | NO ₂ | CO | Ozone | NH ₃ |
|-----------------------|----------------|---------------------|-----------------------------|----------------------------|----------------------------|----------------------------|--------------------------|-------------------|-----------------------------|
| | | | µg/m ³ | µg/m ³ | µg/m ³ | µg/m ³ | mg/m ³ | µg/m ³ | µg/m ³ |
| 1 | Project Site | 1. Min | 57.0 | 21.7 | 9.7 | 14.7 | 0.362 | 6.9 | 5.7 |
| | | 2. Max | 74.3 | 30.9 | 14.5 | 20.8 | 0.490 | 10.2 | 8.7 |
| | | 3. Avg | 65.7 | 26.5 | 12.3 | 17.2 | 0.415 | 8.5 | 7.2 |
| | | 4. 98 th | 73.7 | 30.5 | 14.4 | 20.4 | 0.484 | 10.0 | 8.6 |
| 2 | Ambhora | 1. Min | 54.4 | 18.4 | 7.9 | 12.2 | 0.228 | 5.5 | 5.2 |
| | | 2. Max | 68.8 | 31.7 | 12.5 | 17.3 | 0.491 | 10.7 | 9.5 |
| | | 3. Avg | 61.5 | 24.1 | 10.2 | 15.3 | 0.328 | 8.1 | 7.1 |
| | | 4. 98 th | 67.7 | 31.1 | 12.2 | 17.3 | 0.485 | 10.7 | 9.2 |
| 3 | Chobewadi | 1. Min | 58.5 | 23.8 | 9.0 | 13.3 | 0.324 | 6.3 | 5.7 |
| | | 2. Max | 81.5 | 32.5 | 14.5 | 20.8 | 0.412 | 10.5 | 8.2 |
| | | 3. Avg | 70.2 | 28.8 | 11.5 | 16.8 | 0.375 | 8.3 | 6.8 |
| | | 4. 98 th | 80.2 | 32.3 | 14.2 | 20.4 | 0.409 | 10.2 | 8.1 |
| 4 | Nandur | 1. Min | 59.2 | 23.8 | 7.6 | 13.5 | 0.285 | 5.2 | 4.6 |
| | | 2. Max | 78.6 | 32.1 | 12.0 | 19.1 | 0.431 | 9.8 | 8.6 |
| | | 3. Avg | 67.8 | 27.7 | 9.6 | 15.7 | 0.355 | 7.6 | 6.5 |
| | | 4. 98 th | 77.5 | 31.9 | 11.6 | 18.7 | 0.420 | 9.7 | 8.4 |
| 5 | Kharkhed Khurd | 1. Min | 55.4 | 18.8 | 7.3 | 11.3 | 0.257 | 5.1 | 4.3 |
| | | 2. Max | 77.1 | 28.8 | 10.5 | 17.1 | 0.387 | 9.1 | 8.2 |
| | | 3. Avg | 63.6 | 23.2 | 8.7 | 14.5 | 0.314 | 7.2 | 6.3 |
| | | 4. 98 th | 75.0 | 27.8 | 10.1 | 16.9 | 0.373 | 9.0 | 7.9 |
| 6 | Salewadgaon | 1. Min | 47.4 | 17.9 | 6.2 | 11.7 | 0.262 | 5.2 | 4.3 |
| | | 2. Max | 60.0 | 25.4 | 9.3 | 16.2 | 0.341 | 7.8 | 7.2 |
| | | 3. Avg | 54.2 | 21.8 | 7.5 | 13.6 | 0.296 | 6.5 | 5.5 |
| | | 4. 98 th | 59.6 | 25.1 | 9.0 | 15.8 | 0.335 | 7.7 | 6.8 |
| 7 | Fadar Tanda | 1. Min | 49.1 | 19.2 | 6.7 | 12.5 | 0.306 | 5.7 | 4.6 |
| | | 2. Max | 66.9 | 26.8 | 9.7 | 19.9 | 0.395 | 8.3 | 7.2 |
| | | 3. Avg | 58.6 | 22.6 | 8.3 | 16.4 | 0.348 | 6.9 | 5.9 |
| | | 4. 98 th | 66.0 | 26.2 | 9.7 | 19.4 | 0.389 | 8.2 | 7.2 |
| 8 | Chichodi | 1. Min | 62.3 | 24.2 | 9.7 | 15.9 | 0.324 | 6.5 | 6.0 |
| | | 2. Max | 84.5 | 33.7 | 14.5 | 21.7 | 0.445 | 9.7 | 9.3 |
| | | 3. Avg | 72.4 | 29.1 | 11.8 | 18.3 | 0.388 | 8.2 | 7.3 |
| | | 4. 98 th | 83.4 | 33.6 | 14.5 | 21.3 | 0.442 | 9.6 | 9.0 |
| CPCB Standards | | | 100 (24hr) | 60 (24hr) | 80 (24hr) | 80 (24hr) | 2 (8hr) | 100 (8hr) | 400 (24hr) |

3.3 Ambient Noise Levels

Ambient noise level monitoring was carried out at the 08 monitoring locations; those were selected for ambient air quality monitoring. The monitoring results are summarized in **Table 5**.

**TABLE 5
NOISE LEVELS IN THE STUDY AREA**

| Sr. No. | Monitoring Locations | Equivalent Noise Level | |
|-----------------------------|----------------------|------------------------|----------------------|
| | | Leq _{Day} | Leq _{Night} |
| Residential Area | | | |
| 1. | Chobewadi | 50.3 | 39.2 |
| 2. | Leman Tanda | 48.7 | 38.5 |
| CPCB Standards dB(A) | | 55.0 | 45.0 |
| Commercial Area | | | |

| Sr. | Monitoring Locations | Equivalent Noise Level | |
|-----------------------------|--------------------------|------------------------|-------------|
| 3. | Ambhora | 56.1 | 42.5 |
| 4. | More Basti | 53.8 | 40.9 |
| CPCB Standards dB(A) | | 65.0 | 55.0 |
| Silence Zone | | | |
| 5. | Athvad | 47.2 | 38.1 |
| 6. | Salewadgaon | 44.5 | 37.2 |
| CPCB Standards dB(A) | | 50.0 | 40.0 |
| Industrial Area | | | |
| 7. | Project site- plant area | 65.3 | 52.2 |
| 8. | Project site- near gate | 58.8 | 45.6 |
| CPCB Standards dB(A) | | 75.0 | 70.0 |

Source: Field monitoring and analysis by Anacon Laboratories Pvt. Ltd., Nagpur

3.4 Surface and Ground Water Resources & Quality

3.4.1 Geology and Hydrogeology

Regional geology:

10 km radius study area is mainly comprised of Basaltic formations belonging to Deccan traps of Cretaceous - Eocene age. The basalt formations belong to the type called "Plateau Basalts" and uniform in composition. Study area falls in seismic zone-III i.e. low damage risk zone.

Site specific Geology:

Project area is mostly covered by Black cotton soil which is derived from basaltic rock and having thickness of around 0.5 - 1.0m. Basaltic/Lava flows are common in this type of rocks.

Hydrogeology:

All of the study area is covered by Deccan trap. Groundwater occurs in fractured and weathered conditions. Primary porosity of these formations is very poor. The weathered and fractured zones constitute the aquifer in the study area. The 10km study areas also consist of Kanli and Mehakri Nadi, which flows towards North to South direction with respective project site which indicates the ground water flow direction.

Depth to water level scenario in the study area:

Pre-monsoon Water levels- 0.80 to 11.95 m bgl

Post-monsoon water levels: 1.00 to 9.10 m bgl

Geomorphology:

Study area comprises of undulating plains on Deccan trap of Cretaceous – Eocene age. Flood plains are observed along River courses. There are no major geomorphological structures present in study area such as fault plane, Lineament etc.

3.4.2 Water Quality

Groundwater and surface water quality was assessed by identifying 8 groundwater (Bore well/ hand pump) locations in different villages and 4 surface water samples.

A. Groundwater Quality

The analysis results indicate that the pH ranged 6.81 – 7.84. The TDS was ranging from 336 – 426 mg/l. Total hardness was found to be in the range of 174.33 – 195.63 mg/l. The fluoride concentration

was found in the range of 0.13 – 0.27 mg/l. The nitrate and sulphate were found in the range of 5.91 – 12.82 mg/l and 8.27 – 21.47 mg/l respectively.

The chloride concentration was found in the range of 10.24 to 26.32 mg/l. The Total suspended solid concentration was found below detection limit (DL – 10mg/l) at all sampling location. Heavy metals like As, Pb, Ni were found below detection limit i.e. BDL (DL-0.01), BDL (DL-0.001), BDL (DL-0.1) respectively.

B. Surface Water Quality

The analysis results indicate that the pH ranged between 7.76 - 8.27 which is well within the specified standard of 6.5 to 8.5. The pH of water indicates whether the water is acid or alkaline. The TDS was observed to be 382 - 471 mg/l which is within the permissible limit of 2000 mg/l. The total hardness recorded was in the range of 202.01 – 253.09 mg/l as CaCO₃ which is also within the permissible limit of 600 mg/l. The levels of chloride and sulphate were found to be in the range of 23.63 – 46.59 mg/l and 32.58 – 52.46 mg/l respectively.

The reported value of DO range 5.8-6.4 mg/l. Phosphorus (as PO₄) is an important nutrient for plants and algae. Because phosphorus is in short supply in most fresh waters, even a modest increase in phosphorus can cause excessive growth of plants and algae that deplete dissolved oxygen (DO) as they decompose. PO₄ ranges from 0.43-0.56 mg/l. COD ranges from 16.32 -26.59 mg/l and BOD ranges from 5.91 - 9.31 mg/l.

C. Bacteriological Characteristics

Coliform group of organisms are indicators of faecal contamination in water. All surface water samples were found to be bacteriologically contaminated. Presence of total coliforms in surface water indicates that a contamination pathway exists between any source of bacteria (septic system, animal waste, etc.) and the surface water stream. A defective well can often be the cause when coliform bacteria are found in well water. For surface water, treatment followed by chlorination or disinfection treatment is needed before use for domestic purpose. Groundwater samples were not found to be bacteriologically contaminated.

3.5 Land Use Land Cover Classification

The land-use & land cover map of the 10 km radial study area from the periphery of project site has been prepared using Resource SAT-1 (IRS-P6), sensor-LISS-3 having 23.5m spatial resolution and date of pass 12th November 2021 satellite image with reference to Google Earth data. In order to strengthen the baseline information on existing land use pattern, the following data covering 10 km radius is approximate about 18°59'51.123"N to 19°0'3.512"N latitude and 74°51'59.891"E to 75°3'26.739"E longitude and elevation 599 to 886 meters are used as per the project site confined within that area. The Land Cover classes and their coverage are summarized in **Table 6**.

TABLE 6
LU/LC CLASSIFICATION SYSTEM

| S. No. | Level-I | Level-II | Area (Sq. Km ²) | Percentage (%) |
|--------|------------------------------|----------------------------|-----------------------------|----------------|
| 1 | Built-up land | Settlement | 12.61 | 3.91 |
| | | Industrial Settlement | 2.00 | 0.62 |
| | | Road Infrastructure | 2.80 | 0.87 |
| 2 | Agricultural Land/ Crop Land | Double Crop | 66.60 | 20.68 |
| | | Single Crop | 188.30 | 58.46 |
| 3 | Forest Area | Reserve Forest | 3.04 | 0.94 |
| 4 | Scrubs/Wastelands | Barren Land | 2.17 | 0.67 |
| | | Land with scrub/Open Scrub | 29.85 | 9.27 |
| 5 | Water bodies | River/Nala/Stream | 7.42 | 2.30 |

| | | | | |
|---|--------|--------------|---------------|------------|
| | | Pond/Lake | 5.97 | 1.85 |
| 6 | others | Stony Waste | 1.36 | 0.42 |
| | | Total | 322.12 | 100 |

3.6 Soil Quality

For studying soil profile of the region, sampling locations were selected to assess the existing soil conditions in and around the project site representing various landuse conditions. The physical, chemical and heavy metal concentrations were determined. The samples were collected by ramming a core-cutter into the soil from 15 cm up to a depth of 60 cm. Total 8 representative samples were collected from different locations within the study area and analyzed.

Physical Characteristics of Soil

Physical characteristics of soils were determined through specific parameters viz. particle size distribution, bulk density, porosity, water holding capacity, texture.

The soils with low bulk density have favourable physical conditions whereas those with high bulk density exhibit poor physical conditions for agriculture crops. The bulk density of the soil in the study area ranged between 1.433 - 1.701 g/cc which indicates favourable physical condition for plant growth. The water holding capacity is between 36.78 - 39.63%. Infiltration rate, in the soil is in the range of 24.38 – 26.32mm/hr.

Chemical Characteristics of Soil

pH is an important parameter indicative of alkaline or acidic nature of soil. It greatly affects the microbial population as well as solubility of metal ions and regulates nutrient availability. Variation in the pH of the soil in the study area is found to be neutral (6.72 – 7.14) in reaction. Electrical conductivity, a measure of soluble salts in the soil is in the range of 246.27 – 316.25 µS/cm.

The important soluble cations in the soil are calcium and magnesium whose concentration levels ranged from 239.52 – 312.68 mg/Kg and 46.28 – 56.82 mg/Kg respectively. Chloride is in the range of 149.82 – 191.59 mg/Kg. Organic matter and organic carbon present in the soil influences its physical and chemical conditions and is responsible for stability of soil aggregates. Organic matter and organic carbon were found in the range of 2.45% – 3.17% and 1.42% – 1.96%

3.7 Biological Environment

Floral composition in Study Area

Total 157 plant species were enlisted within the study area out of which habit wise details are given below:

- a. Trees:** Total 58 species were found in the study area
- b. Shrubs (small trees):** Total 17 species were enumerated from the study area.
- c. Herbs:** In the study area 55 species were observed.
- d. Bamboo & Grasses:** 19 species were enlisted from the study area
- e. Climbers and Twiners:** Total 08 species of climbers/ twiners were recorded in the study area.
- f. Parasite/epiphytic plant:** None of the Parasite/Epiphytic plant species observed in the study area

RET (Rare, Endangered and Threatened species) STATUS

According to IUCN Status report 2013 out of total 157 plant species identified with study area. Among the observed species most of the species belongs to the least concern (LC), Data Deficient (DD) and Not Assessed (NA), as per IUCN status. Thus, none of reported species in study area belongs to Rare, Endangered or Threatened category.

Fauna Details:

As per IUCN RED (2013) list

The IUCN Red List is the world's most comprehensive inventory of the global conservation status of plant and animal species. It uses a set of criteria to evaluate the extinction risk of thousands of species and subspecies. These criteria are relevant to all species and all regions of the world. With its strong scientific base, the IUCN Red List is recognized as the most authoritative guide to the status of biological diversity.

Among the reported fauna all mammalians, amphibians, herpetofauna and avifauna are categorized under least concern (LC) category as per IUCN (2013) list.

As per Indian Wild Life (Protection) Act, 1972

Wild Life Protection Act, (1972), as amended on 17th January 2003, is an Act to provide for the protection of wild animals, birds and plants and for matters connected therewith or ancillary or incidental thereto with a view to ensuring the ecological and environmental security of the country.

Some of the sighted faunas were given protection by the Indian Wild Life Protection Act, (1972) by including them in different schedule.

Among mammals; Jackal (*Canis aureus*), Common Mongoose (*Herpestes edwardsii*), Indian fox (*Vulpes bengalensis*), are protected in Schedule –II. whereas, Wild boar (*Sus scrofa*) is protected in schedule – III and (*Funambulus pennantii*), Common Indian Hare (*Lepus nigricollis*) and Bat (*Rousettus spp.*) are protected in Schedule – IV. While Indian Field Mouse (*Mus booduga*) is protected in Schedule – V as per Wild Life Protection Act, (1972).

Among the Herpetofauna, Chameleon (*Chamaeleo zeylanicus*), Checkered keelback (*Fowlea piscator*) Indian Cobra (*Naja naja*), and Russell's viper (*Daboia russelii*) were provided protection as per Schedule-II of Wild life protection act, (1972). Whereas Common Krait (*Bungarus caeruleus*) is protected as per Schedule – IV of Wildlife protection act 1972.

Among the Avifauna: Maximum all the birds were observed in the study are protected in Schedule - IV and few birds are protected in Schedule - V as per wildlife protection act, (1972).

3.8 Socio-Economic Environment

Information on socio-demographic status and the trends of the communities in the 10 km radius was collected through primary social survey and secondary data collection from census 2011 & District Census hand book 2011. Summary of the socio-economic status of the study area is given in **Table 7**. Details regarding infrastructure facilities are presented in **Table 8**.

TABLE 7
SUMMARY OF SOCIO-ECONOMIC ENVIRONMENT OF VILLAGES WITHIN STUDY AREA

| Total household | Total Population | Total Male | Total Female | Total 0-6 child | Total SC | Total ST |
|-----------------|------------------|--------------|--------------|-----------------|-------------|-------------|
| 11224 | 51138 | 26496 | 24642 | 5948 | 4085 | 1174 |
| 4.56 | | 51.81 | 48.19 | 11.63 | 7.99 | 2.30 |

Source: Primary census abstract 2011, District Beed and Ahmednagar, State Maharashtra

TABLE 8
INFRASTRUCTURE FACILITIES AVAILABLE IN THE STUDY AREA

| Infrastructure facilities | Availability (In percentage) As per year 2011, Census Beed District |
|---------------------------|--|
| Educational Facilities | 100% |
| Drinking water | 100% |
| Road | 100% |
| Power | 100% |
| Communication | 100% |
| Transportation | 94.59% |
| Govt. PHC & SC | 27.03% |
| Bank & Society | 59.49% |
| Drainage | 78.38% |
| Recreation | 54.05% |

Source: Primary census abstract 2011, District Beed and Ahmednagar, State Maharashtra.

SALIENT OBSERVATION OF THE SOCIO-ECONOMIC SURVEY

A number of aspects were studied in the villages surveyed for socio- economic studies. Following are the observations found during interviews, focused group discussions and as per the Questionnaire.

- **House pattern:** In the study area it is observed that, the housing pattern varied from thatched to pucca (pakka) houses 70% houses were in pucca (pakka) form 20% in semi pakka and 10% houses were observed in kaccha form. The housing is not found dense. Each house has a good space around it.
- **Employment:** The study area majorly consists of Agricultural land and wastelands. Hence majority of people has main occupation as a farmer or agricultural labour. Other income generation sources of the area, small business, private jobs etc. The labours were getting daily wages in the range of 300-350 Rs, depending on type of work they set.
- **Fuel:** The primary sources of cooking fuel were LPG, but rural areas were observed to be using cow dung and wood etc. also for cooking.
- **Main crops:** The principal crops grown in agricultural Commodities (first) are Pearl Millet, Cotton, Soyabean, Pigeonpea, Sorgham and Vegetables etc. During discussion with villagers/farmers it was revealed that crop productivity of the study area is good but due to less availability of water most people are performing agricultural activities in single season the study area.
- **Migration from other states:** During survey it was found that very few people were migrated.
- **Language:** Marathi is the mother tongue of most of the population. Beed district comes under region Marathwada which as per name suggests Marathi population.
- **Sanitation:** Toilet facility is one of the most basic facilities required in a house. It was observed that more than 80% of the households were having toilet facilities in their houses. Some of the villages no proper drainage line in the villages.
- **Drinking water Facilities:** Most of the village people reported that, during summer, people have to face scarcity of water. The region is not so rich in terms of availability of water. During the

survey it was observed diverse sources of drinking water supply in villages. Major source of drinking water in the study area were hand pumps, tap water and dug wells and canal.

- **Education facilities:** The Primary & secondary data reveals that literacy levels in all the villages is varying from 60 to 75 %. It is observed that, some of the schools are not having proper infrastructure facilities.
- **Transportation facility:** For transportation purpose auto, jeep and private bus services were available in the study area; however villagers reported that transportation facilities were not frequently available. Private vehicles like bicycles & motor cycles were also used by villagers for transportation purpose. The nearest railway station from the project site is around 15 kms.
- **Communication facilities:** For communication purpose mainly mobile phones, newspapers & post offices were present in the villages.
- **Medical facilities:** The Primary & secondary data reveals that there are only. PHCs were found to be available in village Chichondi Patil, Dadegaon, Khuntephal Pundi and and two to three more villages, which reveals that around 25% villages has govt. medical facilities. Apart from that private clinics and hospitals were available in most villages. The key challenges in the healthcare sector are low quality of care, poor accountability, lack of awareness, and limited access to facilities
- **Electricity:** All villages were availing electricity facility for domestic and agriculture purposes. Solar Street lights were also seen in some of the villages.
- **Market facility:** Study area was predominantly rural. In villages, small shops were available for daily need things. Weekly market facility was available in some villages. Wholesale market was available in Ambhora village for more market facilities people has to go to Ahmednagar. The basic amenities exist at all villages.
- **Recreation facilities:** Television, smartphones and radio are the main recreation facilities in the study area. Newspaper/magazine facilities are also used by villagers.

3.8.1 Awareness and opinion of the respondents about the project

A sociological survey was conducted in study area to get an idea about the awareness among public about the project. The Public opinion is the aggregate of individual attitudes or beliefs. The awareness not only promotes the community participation but also enable them to understand the importance of the project and encourage them to express their view. To know the awareness and opinion of the villagers about the project, group discussion, meeting with school teachers/village leaders were carried out in the study area.

Most people in the study area were aware about the existing project but some respondents were unknown of the production facility of the project and also about the proposed expansion.

During the Site visit, the affected villages residents demanded to know the details.

- As this industry is one of the very few industries in study area, the respondents welcomed the project happily and opined positively because the activity would definitely contribute development in the study area.
- Main demands of villagers in study area were for provision of water facilities and Pucca Roads facility.
- Village leaders asked to give employment opportunities to local people.

While giving information about project of M/s CCPL, respondents gave positive opinion and they strongly believe that it will help to develop quality of life in the study area with employment opportunities.

3.8.2 Interpretation

The Project area is majorly consisting of major Agricultural followed by Scrubs/Wastelands. People in the study are mostly relying on farming and labour work. The main crops cultivated are Pearl Millet, Wheat, Cotton, Soybean, Pigeon-pea, Sorgham and Vegetables etc. The major rivers flowing in study area are Mehekari River, Kamli River and Kamli Nala. Most of the agriculture is based on rain fed water leading to one season cultivation. People in the area are aware about presence of the existing project and were happy to know the proposed expansion of the project. Infrastructure facilities like transportation and drinking water facilities, irrigation facilities in the study area need to be developed more for overall development of area. Employment and Education are also two of the major problems of the population, hence more industrial development and provision of more education facilities should be given for overall sociological development of the study area.

The proposed project shall generate direct/indirect employment and indirect service sector enhancement in the region and would help in the socioeconomic upliftment of the state as well as the local area.

4.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.1 Air Environment

The sources of gaseous pollutants within the proposed expansion are boiler, DG sets and vehicular movement within the premises. The emission of Sulphur Dioxide and Oxides of Nitrogen, VOCs will be possible to occur.

In order to control emissions of pollutants during operation phase, adequate control equipment is installed and adequate stack height is provided as per CPCB norms. DG sets will be CPCB compliant.

The maximum ground level concentrations (GLCs) for particulate matter and gaseous concentration SO₂, NO₂ due to existing as well as proposed condition were carried out. The predicted 24-hourly maximum contribution of particulate matter are 4.84 µg/m³ and 4.59 µg/m³ for existing and proposed scenarios.

After proposed expansion, the incremental concentration of PM, SO₂ and NO_x will be 6.95 µg/m³, 12.3 µg/m³ and 10.2 µg/m³ at distance of 141.5 m, 100 m and 100 m in NE, S and S direction respectively.

**TABLE 9
DETAILS OF AIR POLLUTION CONTROL SYSTEM**

| Parameter | Boiler | | Baby boiler | Process reactor | DG Sets | |
|----------------------|---|---|----------------|-----------------|----------------------------------|----------------------------------|
| | Existing | Proposed | | | Existing | Proposed |
| No. of | 1 | 1 | 1 | 1 | 01 | 1 |
| Capacity | 3 TPH | 6 TPH | - | - | 125 KVA | 1000 KVA |
| Fuel | Coal | Coal/Briquette | HSD | - | HSD | HSD |
| Fuel quantity MT/day | 5 TPD | 10 TPD | 21kg/hr | - | 25lit/hr at full load | 200lit/hr at full load |
| APC equipment | Multicyclone dust collector | Multicyclone dust collector | dust collector | Scrubber | Stack height/ acoustic enclosure | Stack height/ acoustic enclosure |
| Emission Level | SPM-50 mg/Nm ³ , SO ₂ -40 kg/day, NO ₂ -100 mg/NM ³ . | SPM-50 mg/Nm ³ , SO ₂ -40 kg/day, NO ₂ -100 mg/NM ³ . | - | - | As per CPCB norms | As per CPCB norms |

| | | | | | | |
|----------|------------|------------|--------------|------------|-----------------------|---------------------|
| Shape | Round | Round | Round | Round | Round | Round |
| Height m | 22 | 30 m | 11 | 10 | 3.5 m above enclosure | 15m above enclosure |
| Duty | Continuous | Continuous | Intermittent | Continuous | Intermittent | Intermittent |

Additional Measures to reduce/control pollution control

- Roads will be frequently sprinkled with water.
- All the materials will be stored under covered shed.
- In case of storage of Sponge Iron/ Carbon Powder; Coal in open, it will be covered by tarpaulins to prevent spread of dust from it during transportation.
- Regular maintenance of vehicles and machineries will be carried out in order to control emissions.
- Green belt development would be taken up all along the roads, plant premises etc.
- Green belt will also be developed on the sides of approach road.
- Protective appliances will be provided to all the workers exposed in dusty atmosphere.
- No overloading of the trucks.
- Workers will be equipped with all personal protective devices like Gum Boot; hand gloves; Safety helmet; Safety goggles, earplugs at work place.
- Speed control of the truck.
- Proper gradient of approach roads to reduce cumulative noise.
- Transportation of materials will be limited to day hours only.
- Periodical maintenance of process machinery.
- End to end pavement of road
- Fleet management Closed process

4.2 Noise Environment

Noise will be generated during the normal operation of manufacturing process due to operational activities of plant activities, blower, ETP, STP, compressor, boiler, and DG Set, etc. The ambient noise levels are expected to increase significantly with the attributes of the respective equipment, but this noise will be restricted close to the concerned equipment. The nearest human settlement Ambhora is 1.3 Km away from project site and resultant noise level at this village are 56.2 dB(A) & 42.5 dB(A) at day & night time respectively. The ambient noise levels (daytime and night time) at some locations will be marginal increased and noise mitigation measure should be adopted at project site to attenuate noise levels to safe limits. The preventive measures are given below:

- Equipment will be standard and equipped with silencer. The equipment will be in good working conditions, properly lubricated and maintained to keep noise within permissible limits.
- Most of the equipment's will be placed in closed room
- Equipment's will be placed on acoustic floor to reduce vibration and noise
- High noise zone will be marked, and earplugs will be provided to the workmen near high noise producing equipment.
- Use of PPES awareness program will be provided to all workers.
- Proper shifting arrangement will be made to prevent over exposure to noise and vibration.
- Tall trees with heavy foliage will be planted along the boundary / project site / plantation area, which will act as a natural barrier to propagating noise.

- Silent DG sets will be used site.
- Speed limits will be enforced on vehicle.
- Regular noise & vibration monitoring will be carried for all equipment's to check compliance with prevailing rules.

Vehicular Movement

There will be NO_x emission impact observed 96 gm/km-hr on the surrounding environment due to 12 vehicles/day. The impact due to the emission of other pollutants will be insignificant. This quantum spread over the whole day at Maximum production is considered low and shall not make significant impact on the transportation route on the road.

The additional load only of (6 trips/day) will add insignificant contribution on the carrying capacity of the concern roads. Hence it is concluded that it is not likely to have any significant adverse effect.

4.3 Water Environment

The proposed expansion may have some impact on the water environment. The impact may be on the source of water in the form of depletion of water resources of the area and in the form of deterioration of quality of natural water resources due to discharge of plant effluent. Total water requirement will be 293.5 KLD. Total water required for domestic purposes will be 10.5 KLD. There will be no industrial effluent discharged outside the plant premises due to existing as well as proposed units. Generated domestic wastewater will be treated in STP and treated water will be used for green belt and dust suppression purposes. Company will maintain zero discharge condition from the plant all the time throughout the year.

The various control measures that will be adopted are:

- Treated domestic waste water will be reused for Gardening.
- Treated Industrial wastewater will be re-circulated in processes.
- It is proposed to install 10 KLD STP based on constructed wet land technology.
- Rain water harvesting will be carried out.
- All stock piles will be on pucca flooring to prevent for any ground water contamination.

4.4 Biological Environment

Ecology & Biodiversity: Aspect - Impact identification and mitigation measures suggestion for proposed expansion project.

| S. No. | Project Aspects / Activities | Impacts | Mitigation Measures Suggested |
|--------|--|---|---|
| 1. | Transportation, unloading & storage of Material and Movement of vehicle inside plant, Dust and sound generation due to proposed expansion activities | Impact on nearby vegetation and avifauna in a scale of 3 out of 5 due to proposed expansion activity. | Thick greenbelt will be developed along periphery of the project site in order to provide buffer between plant fugitive emission and nearest vegetation. |
| 2. | Gaseous emission from Stack, Movement of vehicle inside plant and Raw material & finished product transportation, Product manufacturing | Decline in photosynthetic activities, Stomatal index may be minimized, Crop yield may be reduced. | Air quality modelling outputs study revealed that, the resultant concentrations of particulate matter, sulphur di-oxide and oxides of nitrogen are well within the prescribed limits. Greenbelt area of 1.3173 Ha. (33.2%) will be provided |

| S. No. | Project Aspects / Activities | Impacts | Mitigation Measures Suggested |
|--------|------------------------------|---------|---|
| | | | with local species, broad leaves, higher canopy and fast growing tree species. Existing plants are 1181 nos. whereas additional plantation will also 1418 be carried out. Thus, the total plantation after expansion will be 2599 Nos. (considering 2500/Ha. density). Thus, the impact due to proposed expansion project would be minimal as project activity will be carried out within the plant boundary limit with proper control measures. |

There is no ecological sensitive area like national park, sanctuary, biosphere reserve, within 10 km radial distance from the project site. No forest land involved in the project activities. Thus, no significant impact envisaged on biological environment.

4.5 Socio-Economic Impact

Positive impacts

- There would be multiplier effect on the creation of indirect employment through the local community establishing small shops like tea stalls, supply of intermediate raw materials, repair outlets, hardware stores garages etc.
- Economic growth due to development of area and increase in quality of life.
- Improvement in green cover due to the plantation of trees in the Study area, also are leading to a decrease in environmental pollution.
- Improvement in social and infrastructural development by the industries as a part of CER and EMP.

Negative impacts.

- Environmental pollution due to emission of pollutants may affect the health of the people.
- During operation phase heavy vehicle movement lead to dispersed dust particles which affects the health of the workers and Local Peoples. Trucks, tankers and other vehicles may cause additional air pollution to the surrounding areas. The effects may be more prominent in nearby villages.
- Possibilities of Hazards and accident which may cause harm to the workers working or loss of life of the workers.
- If influx of workers from outside areas then there may an increased pressure on residential accommodation the neighborhood.
- If there is Increase in vehicular traffic may lead to higher incidence of road accidents.

Mitigation Measures

In order to mitigate the adverse impact likely to arise in social, cultural and economic aspects in the surrounding region due to the existing project and improvement in quality of life following mitigation measures should be adopted:



- Air pollution control measures should be taken and proper maintenance of industrial and pollution control equipment should be done to ensure minimum pollution.
- Ensure that roads are properly signed, vehicles are well maintained and drivers are well trained and safety conscious.
- All health and safety measures should be adopted by the company and safety awareness should be improved amongst the workers to ensure the safety of the workers and the surrounding society.
- Project proponent should take appropriate steps to keep environment clean and Green belts development/ Plantation along with the internal Road.
- Transportation of hazardous waste should be done as per CPCB Guidelines. The heavy trucks are covered to prevent spillage or dusting. The drivers should be imparted training.
- Priority is given to local people in employment.
- Social infrastructure development activities should be proposed by the company.

5.0 ENVIRONMENTAL MONITORING PROGRAM

Environmental monitoring shall be done as per the guidelines provided by CPCB/SPCB. The methods conducted or applied shall be approved or accepted by the any recognized body or authority i.e. MoEFCC/CPCB/SPCB. The suggested monitoring shall be done to ensure that Environmental management practices/technologies are adequate to meet the requirement of the prescribed norms as prescribed by state pollution control board.

Environment Management Department with suitably qualified and experienced staff and environmental laboratory to cater the routine monitoring requirement will be implemented in the plant.

As part of the Board structure, Audit & Compliance reporting team shall also oversee the environmental status inclusive of the conditions prescribed under various environmental consents and clearances, as and when obtained from various State and Central Govt. authorities, as well as the corporate norms, standards and targets that exceed the legal compliance requirements.

6.0 RISK ASSESSMENT & DISASTER MANAGEMENT PLAN

The assessment of risk in the proposed expansion project has been estimated for fire, explosion and toxicity and corresponding mitigation measures are suggested in the EIA/EMP report.

A detailed Disaster Management Plan for facing disasters due to natural effects and human reasons is prepared and incorporated in the EIA/EMP report for ensuring safety of life, protection of environment, protection of installation, restoration of production and salvage operations in this same order of priorities. For effective implementation of Disaster Management Plan, it will be widely circulated and personnel training through rehearsals. Site facilities, procedures, duties and responsibilities, communications, etc. are considered in details in the Disaster Management Plan.

7.0 PUBLIC CONSULTATION

The draft EIA-EMP report is submitted for public hearing as per the EIA Notification (dated 14th September 2006) and subsequent amendment thereof. The final report will be upgraded after public hearing.

8.0 PROJECT BENEFITS

The proposed expansion project would provide development of area and consequent indirect and direct job opportunities which would finally result in improvement in the quality of life of people in the central region. M/s. CCPL will carry community welfare activities in the following areas:

- Community development
- Health & medical care
- Roads
- Education
- Drainage and sanitation
- Drinking water supply occasionally in the event of water scarcity through tankers, etc.

The project proponent will comply with its obligation for CSR as per Company's Act too.

Project cost is 38.77 Cr. in addition to the activities along with budgetary provision i.e. Rs. 0.3877 Cr. @1.0 % of project cost provided under CER, M/s. CCPL will also support social welfare activities under CSR obligation under companies act. Although the MOEFCC vide its OM dated 30th September 2020 has provided that the CER value for the project would be based on Public Hearing outcome and as per the commitments made by the project promoters during the Public hearing.

9.0 ENVIRONMENTAL MANAGEMENT PLAN

An Environmental Management Plan (EMP) is formulated for the mitigation of adverse impacts. It is based on the present environmental conditions and the environmental impact appraisal. This plan helps in formulating, implementing and monitoring the environmental parameters during and after commissioning of the project.

The Environmental Management Plan describes in brief, the management's plan for proper and adequate implementation of treatment and control system for pollutants and for maintaining the environment. It also includes development of green belt around the plant, proper safety of the workers, noise control, fire protection systems and measures. The cost for Expansion is Rs. 24.0 Crores including 6 Crores for EMP. The budgetary provision for EMP for proposed expansion project is Capital cost of **Rs. 600 Lakhs** and Recurring Cost of **Rs. 123.5 Lakhs**.

10.0 CONCLUSION

The project is environmentally, technically and economically feasible with respect to followings:

All activities are confined to private industrial land and minimum possible emission is allowed to enter in to the environment due to proposed project. Thus environment will not be adversely affected in any way.

- In the proposed process, it is proposed to control the PM emission to less than 50 mg/Nm³.
- Most of the wastewater generated will be recycled/reused in the process,.
- Wastewater will be treated in full-fledged effluent treatment plant. The treated wastewater will be used for green belt and gardening purposes. Domestic waste will be sent to STP and utilized in gardening.
- The development of green belt and plantation will help to attenuate the noise levels and restrict air pollution and will increase the aesthetics.
- Apart from this, the environmental management plan delineated may help to reduce pollution by implementation.

- The enterprise social commitment policy (formerly CSR) will work further to bring out the development of the surrounding villages and thus area and quality of life of people will be improved.
- The cost of environmental control and monitoring measures are computed and provision for capital & recurring is made by the management.
- The project has overall positive impact and it will provide employment to around ~125 persons directly during operation which will be helping to improve quality of life of the people.
- This project being export oriented the additional capital investments will add to national exchequer and will be value addition in terms of revenue generation and enhanced foreign exchange earnings.
- Employees, company and region will be directly / indirectly benefitted.

Concluding Remarks:

Thus it can be concluded on a positive note that after the implementation of the mitigation measures, Environmental Management and Monitoring Plans as enumerated above, the normal operation of M/s. CCPL will have no significant impact on environment and the project will be benefitted to local people to some extent with an economic growth in state/ country level. All statutory compliances will be obtained prior to proposed expansion.

11.0 DISCLOSURE OF CONSULTANTS

The environmental studies for proposed project of M/s. Canpex Chemicals Pvt. Ltd. are carried out by M/s. Anacon Laboratories Pvt. Ltd., Nagpur (M/s ALPL). Anacon established in 1993 as an analytical testing laboratory and now a leading Environmental Consultancy firm backed by testing lab for environment and food in Central India region. M/s ALPL is a group of experienced former Scientists from the Government Institutions and excellent young scientist of brilliant career with subject expertise. It is recognized by Ministry of Environment & Forests, New Delhi for carrying out environmental studies & accredited by Quality Council of India (QCI) for conducting Environmental studies vide accreditation Certificate No: NABET/EIA/2023/SA0160 dtd. 13th April, 2022, Valid till 29th March, 2023 as category 'A' consultant for Sector No. '21'.