

EXECUTIVE SUMMARY

for

EXPANSION OF FERTILIZER MANUFACTURING UNIT (PULGAON)



at

BEC Fertilizer Pulgaon Unit, Survey No. 375/I-K, Village-Gunjkheda, District- Wardha, Pulgaon-442302, Maharashtra.

Type of Project	Brownfield Project
Category as per EIA notification 2006 and its amendments:	Activity 5(a) , Chemical Fertilizers Category A
Total Plot Area	202350 m² (20.2350 ha.)
Total Production Capacity (After Expansion)	Single Super Phosphate (SSP): 1,50,000 MTPA; Triple Super Phosphate (TSP): 50,000 MTPA; Granulated Fertilizer (GSSP/BGSSP/ZGSSP/ZBGSSP/ NPK/Customized Fertilizer): 2,00,000 MTPA; Sulphuric Acid: 50,000 MTPA, Sodium Silica Flouride (SSF): 750 MTPA
Cost of Proposed Expansion	₹ 10 Crores
TOR Letter/Proposal No.	IA-J-11011/182/2022-IA-II(I) dated 18.08.2022.
Baseline Monitoring Period and Laboratory	Period: March to May 2022 J. P Test House & Research Centre Shahibabad Industrial Area Shahibabad Ghaziabad (UP); NABL Accredited- Certificate No. TC-8047 valid till 30/06/2022
NABET Acc. No.	NABET/EIA/1922/RA0197 dated 15.03.2021 valid till 23.11.2022

PROJECT PROPONENT



M/s BHILAI ENGINEERING CORPORATION LIMITED

Industrial Area, Post Box No. 31, Bhilai-490001

Email: varghese.mathew@becfertilizers.in ; Phone no.: +91-9422905471

UID No.: EQMS/PFR/BEC/5(a)B/PR-679/12102022

Report Release Date: 21/05/2022

Revision No: 00

ENVIRONMENTAL CONSULTANT:



(Approved Consultant)



EQMS INDIA PVT LTD. (now known as M/s EQMS Global Pvt. Ltd.)

304-305, 3rd Floor, Plot No. 16, Rishabh Corporate Tower, Community Centre, Karkardooma, Delhi - 110092

Phone: 011-42270087, 43062757; Website: www.eqmsglobal.com ; E-mail: eqms@eqmsindia.org

Disclaimer: This document has been prepared with all reasonable skills, knowledge, care and diligence by M/s. EQMS India Pvt. Ltd., Karkardooma, Delhi, the NABET accredited and national level leading Environmental Consultancy Organization within the terms of the contract with the client (Project Proponent), incorporating their General Terms and Conditions of Business and taking account of the resources devoted to it by Business Agreement. The report was discussed with the project proponent in details before releasing. This report has been prepared using information received from Client, collecting primary data and compilation of secondary data from available resources. We are not responsible for the origin and authenticity of the information, drawings or design details provided by the Client.

Chapter 1.EXECUTIVE SUMMARY

1.1. Introduction

BHILAI ENGINEERING CORPORATION LIMITED (BEC) since its inception 50 year ago, steadily maintains its growth both in size and diversity to stand today with an annual turnover of over USD 100 MILLION. It comprises of versatile plants with state-of-the-art facilities that strengthen a wide span of business activities from Manufacturing, Exporting, and undertaking Turnkey Projects. Bhilai Engineering Corporation remains firmly committed to the Agriculture Sector with the long-term objectives of improving Crop Yields through modern Agriculture practices and application of proper Agro inputs like Fertilizers and Agro Chemicals. Agro chemical industry strives in achieving quality product and service towards the farmer which is very visible through the strength of our brand name in the market.

M/s Bhilai Engineering Corporation Limited has planned for “**Expansion of Existing Fertilizer Manufacturing Unit**” at Survey No. 375/I-K, Village-Gunjkheda, District- Wardha, Pulgaon-442302, Maharashtra. The project currently manufactures Sulphuric Acid, Single Super Phosphate, Granulated Fertilizer {Granulated Single Super Phosphate (GSSP), Boronated Granulated Single Super Phosphate (BGSSP), Zincated BGSSP, NPK Fertilizer/Customized Fertilizer}, Sodium Silica Fluoride (SSF). The existing unit is operational in accordance to Consent to Operate granted by Maharashtra Pollution Control Board (MPCB) vide File No.- RED/M.S.I. (R52) No,;- Format 1.0/AS (T)/JAN No. 0000106963/CR-21000077 dated 04.10.2021 (valid upto 31.03.2026). Since the unit was established before EIA notification 1994, Environmental clearance under EIA notification 1994 and 2006 is not applicable. Since than unit operational without production change. Now unit proposed for expansion of the existing products along with introduction of new product i.e., Triple Super Phosphate (TSP).

The application for the scoping of the said project was submitted to the Expert Appraisal Committee (EAC), MoEFCC and Terms of Reference was granted vide Proposal No. IA-J-11011/182/2022-IA-II(I) dated 18.08.2022. (TOR letter is annexed as Enclosure-I).

Details of total proposed production capacity is mentioned below in **Table 11.1**:

Table 1.1 : Details of Proposed Production Capacity of Project

Sr. No.	Name of Product	CAS No.	Unit	Total Production Capacity		
				Existing	Proposed/ Additional Production	Total after Expansion
1	Single Super Phosphate (SSP)	8011-76-5	MTPA	66000	84000	150000
2	Triple Super Phosphate (TSP)	8011-76-5	MTPA	0	50000	50000
3	Granulated Fertilizer/ (Granulated SSP, Boronated Granulated SSP, Zincated Granulated SSP, Zincated Boronated Granulated SSP), NPK, Fertilizer/ Customized Fertilizer	66455-26-3	MTPA	60000	140000	200000

Sr. No.	Name of Product	CAS No.	Unit	Total Production Capacity		
				Existing	Proposed/ Additional Production	Total after Expansion
4	Sulphuric Acid	7704-34-9	MTPA	33000	17000	50000
5	Sodium Silica Fluoride (SSF)	1689-85-9	MTPA	180	570	750

****As per season, the demand of products pattern changes and accordingly products will be manufactured. All the products will not be manufactured at a time. The likely production capacity of the products will depend upon demand but limited to the sanctioned capacity and only interchangeability will be applicable.***

Detailed statement of the project is shown below in **Table 11.2**.

Table 1.2 : Details of Proposed Project

S.No.	Particulars	Unit	Details			Remarks
			Existing	Proposed/ Additional	Total after Expansion	
1	Total Project Cost	Rs. (In Crores)	-	10	10	Cost for Proposed Expansion
2	AREA DETAILS					
a.	Total Plot Area	m ²	202350	0	202350	No Change
3	POPULATION					
a.	Workers/Staff	No.	25	30	55	Increase
4	SERVICE DETAILS & ENVIRONMENTAL ASPECTS					
a.	Total Water Requirement	KLD	408	258	666	Increase
b.	Fresh Water Requirement	KLD	310	186	496	Increase
c.	Wastewater Generation (Including Domestic Sewage & Industrial Effluent)	KLD	98	72	170	Increase
d.	Wastewater Treatment Schemes/Capacity	KLD	Industrial Effluent- Effluent Collection Pit Domestic Sewage Treatment- Biodigester Unit			No Change
e.	Recycled Water Reuse	KLD	98	72	170	Increase
f.	Power Requirement	MW	0.75	0.75	1.5	Increase
g.	DG Sets (Backup)	kVA	1x380; 1x125	0	1x380; 1x125	No Change

1.2. Terms of Reference

The application for the scoping of the said project was submitted to the Expert Appraisal Committee (EAC), MoEFCC and Terms of Reference was granted vide Proposal No. IA-J-11011/182/2022-IA-II(I) dated 18.08.2022

1.3. Project Categorization

As per the Government of India (Ministry of Environment, Forests & Climate Change (MoEF&CC),) EIA Notification 2006 and further amendments, the proposed expansion of project will be covered under **Activity 5(a); Category A** and hence requires environmental clearance from EAC. The proposed project is located outside Notified Industrial Area. Hence, Public Hearing is applicable for the project.

1.4. Project Location

The project is located at Survey No. 375/I-K, Village-Gunjkhedha, District- Wardha, Pulgaon-442302, Maharashtra. The coordinates of center of site are **Latitude:** 20°44'4.46"N and **Longitude:** 78°20'24.73"E.

1.5. Description of the Environment

1.5.1. Site Characteristics

The existing fertilizer manufacturing plant of M/s Bhilai Engineering Corporation Limited (BEC) is located in Gunjkhedha Village, Deoli Taluka, Wardha District of Maharashtra. It is located 26.79 km, W from Wardha. The site is accessible to NH-243 (1.06 km, S) and NH-244 (1.71 km, W). It is located 1.81 km from Village-Gunjkhedha and 2.49 km, SW from Pulgaon Town. Nearest Railway Station from the project is Pulgaon Railway Station located at 2.30 km, SW from site. Nearest Airport from the project site is Dr. Babasaheb Ambedkar International Airport located at 83.8 km in NE of project site.

1.5.2. Topography

Topography of 10 km Radius around project: The topography of 10 km radius area around project site is slightly undulating and the elevation ranges from 240 – 325 amsl.

Topography of Project Site: The topography of project is plain with elevation ranging from 290-295 amsl. There is a slope observed towards south of the project

1.5.3. Climate and Meteorology

Temperature– December, January and February constitute winter months with daily mean minimum temperature around 13.4°C and daily mean maximum temperature around 42.7 °C. May is the hottest month with daily mean maximum temperature at 42.7 °C and daily mean minimum temperature at 27.8°C.

Relative Humidity– The air is generally humid in the region with maximum during the monsoon (June to September). April and May are driest with relative humidity ranges between 19-35%. The maximum humidity during rainy season is 85%.

Rainfall– The annual total rainfall is 1100.3 mm. Over 83.5 % of the total annual rainfall is received during the monsoon period between June to September.

Wind Speed– The annual mean wind speed is 6.0 kmph. During post-monsoon, the wind speed range was from 4.2 to 4.7 kmph, 5.4 to 8.5 kmph was observed during monsoon while 4.7 to 8.4 kmph was recorded during pre-monsoon period.

1.5.4. Soil Environment

7 sampling locations were monitored in 10 km study area.

Parameter	Interpretation			
	Core Zone		Buffer Zone	
	Value	Category	Value	Category
Soil Reaction Classes (pH)	6.9	Neutral	7.1-7.7	Neutral to Slightly Alkaline
Organic Carbon (%)	0.82	High	0.56-2.4	High
Available Nutrients (Fertility Status)				
Available Nitrogen (kg/ha)	182	Low	175-232	Low
Available Phosphorous (kg/ha)	17.54	Medium	13.5-20.1	Medium
Available Potassium (ppm)	73.4 (164 kg/Ha)	Medium	73.2-85.2 (163.9-190.8 kg/Ha)	Medium
Micronutrient				
Mn (mg/kg)	6.0	Non-Deficient	4.7-7.1	Non-Deficient
Zn (mg/kg)	2.4	Non-Deficient	2.0-2.9	Non-Deficient
Cu (mg/kg)	1.12	Non-Deficient	0.95-1.82	Non-Deficient
(Singh et. al. 2004, Mehta et. al.1988, Follet & Lindsay 1970 and Berger & Truog, 1940)				

Thus, based on Nutrient Index Value for N, P and K, the soils of study area fall into **Low to medium fertility status**.

1.5.5. Water Environment

Observations on Ground Water Quality: 7 samples of groundwater nearby the project site were monitored. All physical and general parameters were observed within the permissible limit as per IS10500:2012 (Second Revision). The analysis results indicate that the pH ranged between **7.39 to 7.59**, which are well within the specified standard of 6.5 to 8.5 limit. Total hardness was recorded to range from **228 to 406 mg/l**, which is within the permissible limit 600 mg/l at all locations. The Total Dissolved Solids (TDS) concentration recorded ranged between **514 to 1165 mg/l** and was within the permissible limits (2000 mg/l) at all locations. Chlorides at all the locations were within the permissible limits (1000 mg/l) as it ranged between 135 – 325 mg/l. Sulphates at all the locations were within the permissible limits (400 mg/l) as it ranged between 29– 168 mg/l. Bacteriological studies reveal that no coliform bacterial are present in the samples. The heavy metal contents were observed to be in below detectable limits. All physical and general parameters were observed within the permissible limit as per IS10500:2012 (Second Revision). Thus, it is recommended that water be filtered and disinfected prior to be given for drinking water requirements.

Observations on Surface water Quality: 8 surface water samples around the project site was monitored. The pH values of all analyzed samples ranged between 6.5 – 8.1 and are within the class A limit (6.5-8.5). The TDS levels were observed to be 650-960 mg/l i.e., below Class B limit of between 500-1500 mg/l. Total hardness levels were observed to be ranging from 94-152 mg/l (within limits of Class A i.e., 500 mg/l). Values of total dissolved oxygen were observed between 4.1 mg/l to 5.8 mg/l. Chloride levels were observed between ND(0)-82 mg/l i.e., within limits of Class A (250 mg/l). The levels of sulphates were observed be 117-

175 mg/l (within Class A limits i.e., 400 mg/l). Nitrate levels of study area were found to be ranging from 5 to 14 mg/l (within Class A limit i.e., 20 mg/l). Total Coliform levels were observed from 64 to 160 mg/l and were found within the limits specified for Class B (50-500 MPN/1000 ml).

Comparing the values of pH, DO, BOD and Total Coliforms with 'Use based classification of surface waters' published by Central Pollution Control Board; the analyzed surface waters is moderately polluted and classified as "**Class 'C'**" and can be use for as Drinking water source after conventional treatment and disinfection. Thus, all the analyzed parameters were within the limits specified for suitable for meeting drinking water requirements after conventional treatment and disinfection.

1.5.6. Air Environment

The monitoring results of ambient air quality were compared with the National Ambient Air Quality Standards (NAAQS) prescribed by MoEF; GoI Notification dated 16.11.2009. The maximum concentration of PM₁₀, PM_{2.5}, SO₂, NO_x, CO was 98 µg/m³, 54 µg/m³, 22.8 µg/m³, 28.10 µg/m³ and 2.1 mg/m³, respectively. On the criteria of AQI, the AQI Category for each of monitoring station has been found to be satisfactory.

1.5.7. Noise Environment

Nine locations for noise monitoring were sampled in 10 km radius study area of the project. The noise level is within the prescribed limit in all the monitoring stations as per classification of area.

1.5.8. Biological Environment

There is no reserve, Protected and revenue forest present in the study area. There about 71% land in study area is under cultivation. There is only 9% of the land area is under vegetation that is also the open scrubs. The vegetation type in study area is dry deciduous type. There is no national park, wildlife sanctuary, biosphere reserve, wetland, protected and reserved forest is present in the study area (10 km area around proposed site).

Flora: Threatened taxa are those species which are vulnerable to endangerment in the near future. Threatened status of any taxa is not a single category but is a group of three categories, critically endangered, endangered and vulnerable. On the application of different criteria of IUCN for the assessment of conservation status of taxa, no taxa were found threatened in the study area. The reported taxa have also not been enlisted in the Red Data Book of Indian plants (Nayar and Shastry, 1988).

Rare and Endangered Plant Species in the Study Area: No rare and endangered plant species was observed in the study area (Source: Red Data Book of Indian Plants, N.P Nayar and A. P. K. Sastry, B.S.I. 1988).

Fauna: As per present study, 12 species of mammals and 8 species of reptiles and amphibian were reported from the study area. As per the wildlife protection Act 1972 none of the mammals, amphibian and reptile species is listed as schedule-I species except Python (*Python molurus*) which is the only schedule-I species present in the study area. Other reported faunal species belong to Schedule- II, III, IV & V. These species were also reviewed as per the IUCN Red list and all the recorded species listed as "Least Concern" in IUCN list.

Avifauna: As per present study, 37 avifauna species have been recorded in the study area. The list has been crosschecked with wildlife protection Act 1972 and none of the species found in schedule-I category. Most of the avifaunal species belongs to Schedule- IV & V. These faunal species were also reviewed as per the IUCN Red list and all the recorded species listed as “Least Concern” in IUCN list.

1.5.9. Socio-economic Environment

As per the census records 2011, the total population was recorded as 98129 persons of 52 revenue villages/towns. All study area revenue villages are under 4 tehsils namely *Deoli*(20 villages) *Arvi* (18 village), Dhmangaon Railway (11 Viilages) Wardha(2 villages) and 1 Town in Deoili of Wardha and Amravati District in Maharashtra. Total number of ‘Households’ was observed as 23339 in the study area. Male-female wise total population in the study area was recorded as 50568 males and 47561 females respectively..

1.6. Anticipated Environmental Impacts and Mitigation Measures

1.6.1. Air Pollution

During Construction Phase, civil construction activities and foundation development for project may lead to dust generation. Operation of construction machineries and fuel combustion will lead to air emissions. Construction activities will be short-lived and restricted within vicinity of project area. Impact generated due to construction activities will be regulated within limits by implementation of mitigation measures like Barricading will be done around the construction site to control dust dispersion into the surroundings, Dust suppression by regular water sprinkling in and around the project site, Routine preventive maintenance of construction equipments etc.

During Operation Phase, The main types of air emission from project will be process emissions, fugitive emissions and flue gas emissions. Sources of fugitive gas emissions will be dryer, grinding mill section, acidulation section (hopper, mixer etc.), raw material feeding section equipments, and granulation section. Fugitive emissions may also be generate from improper handling, spills & leaks from storage tanks & drums. Air emissions could affect general ambient air quality in project site and nearby residential areas that might lead to discomfort and related respiratory & odour problems to people. Flouride emissions will also be generated from acidulation of rock phosphate & curing of product.

To control such emissions, air pollution control measures like Twin cyclone, Multistage scrubber system with venturi and spraying tower, alkali scrubber, demister and mist eliminator installed with effective efficiency. Carbon filter with Appropriate stack height of DG Sets will be maintained as per CPCB norms. Emissions from plant stacks will be maintained within statutory limits prescribed by MPCB/CPCB. .

1.6.2. Noise Pollution

During Construction Phase, main causes of noise will be operation of construction machineries & equipments like compressors, mixers, cranes, generators. Noise will also be generated from movement of vehicles carrying materials, loading & unloading activities, operation of DG Sets etc. Due to construction activities, there may be increment in noise levels in the nearest residential area that may also lead to nuisance and disturbance. However, all preventive measures will be executed to avoid noise pollution like limiting time

of construction activity during daytime only, Regular noise level monitoring, provision of noise mufflers & noise suppression equipments to all machineries etc.

During Operation Phase, the most probable sources of noise generation in the project will be various instruments like blowers, vacuum pumps, process pumps, granulator dryers, coolers, crushers etc., & vehicular movement along the road around the plant. The proposed SSP project will be a smaller project with advanced technology and improved equipment both in terms of energy efficiency and less noise. Continuous noise and vibrations may cause several problems to human as well as animals. However, noise will be maintained within permissible limits by implementation of mitigative measures like use of suitable muffler system/enclosures/sound-proofing glass panelling on heavy equipment/pumps/blowers, insulation of equipments with enclosed doors, appropriate placement of equipments in such an orientation that would direct the noise away from sensitive receptors, plantation around the project etc.

1.6.3. Water Pollution

During Construction Phase, water will be required by labours for domestic usage and for construction activities. Freshwater during construction phase will be sourced by private tankers. Wastewater generated will be disposed through existing biodigester treatment unit. Construction will be continued for limited time only. Likely impacts on water quality during construction phase and wastewater generated from construction sites..

During Operation Phase, Existing total water requirement of the project is 408 KLD. Out of total, 310 KLD of freshwater requirement is sourced by Wardha River. Rest of the water requirement i.e., 98 KLD is being sufficed by reusing treated water from Effluent Collection Pit and Biodigester Unit.

After expansion the total water requirement will be 666 KLD. Out of total, 496 KLD of freshwater will be supplied by Wardha River. Rest of the water requirement i.e., 170 KLD will be sufficed by reusing treated water from SSP-ETP Plant and Biodigester plant. Permission for the additional water has already been obtained.

Improper disposal and handling of wastewater may lead to contamination of groundwater that could eventually lead to scarcity in the near future. However, BEC will abide by the concept of "Zero-liquid Discharge" project.

Existing wastewater generation from project is 98 KLD (Industrial Effluent-68 KLD; Domestic Sewage & Miscellaneous Wastewater- 30 KLD). 68 KLD industrial effluent is being discharged into Effluent Collection Pit and is being directly reused in the plant. 30 KLD of domestic sewage & misc. wastewater is being treated in Biodigester Unit. 98 KLD of treated water is being completely reused in the plant. It is a "ZLD" Project.

The total wastewater after expansion will be 170 KLD (Industrial Effluent- 130 KLD; Domestic Sewage & Misc. Wastewater-40 KLD). 130 KLD industrial effluent will be discharged into Effluent Collection Pit and is directly reused in the plant. 40 KLD domestic sewage & misc. wastewater will be treated in Biodigester Unit. 170 KLD treated water will be completely reused in the plant for purposes like gardening, granulation and SSP/TSP process. The project will be a "ZLD" project.

1.6.4. Waste Management

Construction activities will lead to generation of sand, gravel, concrete, stone, bricks, wood, metal, glass, polythene sheets, plastic, paper etc. as waste. Municipal waste will be generated from labours. Improper storage and disposal may increase the risk of microbial contamination that would lead to foul smell. Construction wastes like rocks, asphalt, metal, gypsum etc. will also be generated from construction activities. All these activities may lead to deterioration in aesthetics of the area, disturbance in routine activities of people in nearby residential areas if not disposed off properly. BEC therefore has planned to abide by following preventive measures to avoid waste accumulation and related complications.

During Operation Phase, There will be generation of several kinds of hazardous wastes from the project like discarded containers/barrels/liners, used/spent oil etc. Hazardous wastes may cause harm if not disposed off properly. There is potential for accidental spills while re-fuelling or servicing vehicles and through the breakage due to wear and tear. Thus, proper disposal of waste is required for to maintain hygiene at site. Additionally, improper disposal of municipal waste in site could lead to pathogenic diseases and related ailments among staff and nearby people.

BEC already comply with possible mitigation measures to avoid damage to environment from accumulation and contamination of hazardous wastes

Land Environment

Expansion is proposed within the existing unit on the available vacant land their shall be no change in landuse.

1.6.5. *Soil Environment*

During Construction Phase, oil erosion may happen if open areas are left without paving or plantation. Thus, it is required to either pave or green the open areas. Soil may get contaminated, if sewage is disposed of on the soil, littering of municipal waste, e-waste and spillage of HSD, oil and fuel.

During Operation Phase Spillage of material like effluent, chemical, hazardous waste, used oil and fuel may contaminate the soil. Due to improper disposal of solid waste & liquid waste includes the leaching from biodegradable waste and effect on flora from spillage of waste on soil. Improper disposal of Effluent during shutdown may encounter soil and contaminate.

As described in baseline, the soil quality of the project site has medium fertility with adequate levels of micronutrient. Similarly, soil quality of nearby monitoring stations has also been found to be in low to medium fertility status. The industry will adopt every measure to prevent oil spillage. It will be mandated that there will be no disposal of hazardous waste into the soil..

1.6.6. *Ecology and Biodiversity*

During Construction Phase, The site is a vacant land within existing operation fertilizer unit surrounded with other industry, brick , cement manufacturing and stone crushing units located in the vicinity. There are no reserve and protected forests located within 10 km radius of project site. There are trees present on site too. There are no threatended or vulnerable

species of flora, fauna or avifauna within 10 km radius of project site except peacock which comes within least concern category. Due to operation of construction machineries, construction works and influx of labours, there may be disturbances experienced to local pets. Effect may also be observed to micro species in and around the project site. There will be no uprooting or translocation of existing trees on the plant. Development will be done in such a way that all trees will get retained. Best practices will be executed during construction activities to avoid any loss of species.

During Operation Phase, the impact on the surrounding ecology of the project will mainly occur from the deposition of air pollutants. There will be minor increment anticipated in air components of environment. However, after implementation of air pollution control measures and emission control mitigation measures, the impact will be insignificant. Also, the proposed project will be Zero-liquid discharge project. Thus, no major impact is anticipated due to the proposed project. All MPCB and MoEF&CC standards shall be maintained. Beside above, dense green belt has will be developed all along the boundary premises which will act as a barrier for noise and air pollution.

1.6.7. Socio-Economic Environment

During Construction Phase, there will be development of shed, commissioning of machineries and related foundation works will be done. Approx. 100 no. of labours will be employed for construction phase. Local labours will be hired that would increase the livelihood and income generation of nearby people. The project construction activity will have positive impact on the social environment. Accident and Noise related problems in the plant are the main concerns for local labour. Measures like sanitation, drinking water facility, provision of PPE's etc., will be done at site for welfare and safety of labours.

During Operation Phase, Employment will be given to 30 no. of additional people apart from existing 25 no of existing employment. Indirect employment opportunities being generated in various activities like raw material and final products transportation, contractual manpower for non-critical activities at the plant (canteen, gardening, housekeeping etc.). The industrial growth of the region will help in infrastructure development in the area.

There are different sources of air pollution during operation phase of the project which directly and indirectly affects the atmosphere. Increased pollutant level may cause respiratory problems to the workers and other people in the area.

Conclusion

From above analysis, it is found that the impacts anticipated vary from moderate to low significance and magnitude. Minimal impact is anticipated during construction phase that will be recovered by following appropriate environment management control measures. However, during operation phase, impact is anticipated due to increased polluted air quality, wastewater generation and increased noise level. The project also has various positive impacts like direct and indirect employment generation, increase in the indigenous production, and ease of the availability of chemical fertilizers to farmers emission reduction from vehicular movement. It is believed that the anticipated negative impacts can be normalized by taking the mitigation measures.

Proper environment and social management plans are to be prepared for ensuring implementation of the proposed mitigation measures.

1.7. Environmental Monitoring Programme

Environmental monitoring plan will be implemented as per regulatory requirement to comply the necessary compliances. Environmental monitoring plan will be implemented as per regulatory requirement to comply the necessary compliances. As per the MoEF&CC guideline, Environment monitoring report and compliance of conditions mentioned in the environment clearance will be submitted to the RO-MoEF&CC, SPCB, MoEF&CC online portal i.e., parivesh and shall be uploaded on company's website. Compliances will be submitted in month of June and December for the period of April to September and October to March respectively. Third party laboratory (approved MoEF&NABL laboratory) shall be appointed for carrying out the monitoring. Also, self-environmental audit, Health & safety audit shall be conducted annually.

1.8. Additional Studies

Risk assessment study has been undertaken to identify the Hazard and preparation of mitigation. On-site and Off-site Emergency plan will be adopted in the plant. Following safety measures have been recommended by the plant.

- Safe operating procedures should be available for all operations practices and equipment.
- The workers should be informed of the consequences of failure to observe the safe operating procedures.
- Electrical resistance for earthing circuits should be maintained.
- The preventive maintenance will be planned and carried out as per plan to avoid the failure of flanges, pipelines and other component of transferring line. The leakage/spillage will be confined to the dyke area underneath the vessel.
- Acid unloading standard procedure will be in place and will be implemented for safe unloading of road tanker.
- Static earthing provision will be made for tanker unloading.
- Drum handling trolleys will be used for transportation of drums up to plant and internal handling from storage to process area.
- Fire extinguishers will be provided as required.
- First aids boxes will also be provided at different places.
- Water showering system will be provided to the flammable chemicals storage area.
- Area will be declared as "NO SMOKE ZONE".

1.9. Project Benefits

The project will be beneficial to nearby people. Through CSR/ISC activities company management will be committed to improve infrastructural facilities for the local people in field of Environmental, Medical, and Transportation etc. Based on the preliminary site visit, the infrastructure demand in the villages will be assessed based on need and priority.

- The proposed project will lead to direct and indirect employment to additional 30 persons for facilities like transportation, contractual labour for loading/unloading of materials and unskilled labours.

- Training programs will be set up for the development of local community as per the work requirement.
- Induced secondary development in the area.
- Increased cash flow and stimulation of local economy within the host community and localized economic benefits from materials supplies by local contractors
- Training and skill development of the local population for their better livelihood.
- Indirect business opportunities to the local people shall be available during the construction as well as the operation phase
- Development in housing, electrification, medical, health sector will improve.
- Enhancement in infrastructure facilities and utilities further improving the living conditions in general.
- It will result in improvement in the economy of the local vendors.

1.10. Environment Management Plan

OH&S policy and EHS policy will be adopted by the plant for sustainability. A separate EMP cell, Fire & Safety cell and Occupational Health Centre will be provided in the plant for compliance of Environmental management plan and OHSAS guideline.

The total estimated cost of the project is **Rs. 10 Crores.** expansion activity will start after grant of Environmental Clearance to the project and plan approval. Accordingly, the estimated time of completion of construction works will be 24 months. Approx. Rs. 160 Lakhs of will be contributed for implementation of Environment Management Plan. Company will spend cost on environment management plan for compliance of standards, norms laid down by GoI and environmental sustainability.

BEC will implement all guidelines laid down by CPCB and MoEF&CC for CREP (Corporate Responsibility for Environmental Protection) and submit the annual compliance of the same to the MPCB.

1.11. Conclusion

Thus, it can be concluded on a positive note that after implementation of the mitigation measures and Environment Management Plan, the operation of the project will have no major impact on environment.

CHAPTER 2. DISCLOSURE OF CONSULTANT

EQMS India Pvt. Ltd. is one of the leading Environmental Consultancy having accreditation in more than 17 sectors. We have experience of more than 20 years in the field of environmental consultancy services with providing services all over India and in the neighbouring countries Sri-Lanka, Nepal, Bangladesh, Bhutan, Saudi Arabia and Abu Dabi in the sectors like Building Construction and Area Development, Inland Waterways, Metro and Railways, Highway Bridges, Wind and Solar Power, Industrial, Due Diligence, Cement Projects, Mining Projects, and Many more.

We also have experience of working on various projects which are funded by bilateral and multilateral funding agencies like World Bank, ADB and IFC etc. We have enormous experience of working on various Building constructions and Area Development Projects We have the team of well experienced and qualified professional who can undertake titanic projects with easy.

The EQMS is a NABET accredited A Category consultant and is authorize to carryout EIA study for 5 (a) – B category projects also as per schedules. Therefore, EQMS India Pvt Ltd. has been accorded work of carry out environment impact assessment of the Proposed SSP/Fortified (Zincated/Boronated) SSP, GSSP/Fortified (Zincated/Boronated) GSSP and Mixed Fertilizer (NPK/PROM) Manufacturing Plant at KH. NO. 28 of Mouza, Marajghat, PH NO. 13, TQ.: Umred, District-Nagpur, Maharashtra-441203 by M/s The Vidarbha Cooperative Marketing Federation Limited, Nagpur (VCMF). The key person deployed for the project is listed below:

Mrs. Sweta Shah (EIA Coordinator and FAE NV, AQ, AP, SHW) having 10 years of experience shares her valuable information in the functional areas and technical assistance during discussions and field work for the projects. Represented the company at the MoEF Expert committee meetings and State SEAC meetings for presenting the EIA reports and successfully obtained environmental clearances to various projects.

Function Area Expert:

Mr. Ratnesh Kotiyal (EC and FAE-EB), Deputy General Manager accredited FAE by NABET has worked in the current project as an Ecology and Biodiversity expert. He has over 17 years of experience in EIA and is technical group head for EIA related activities and infrastructure projects.

Mr. Anil Kumar (FAE-LU and SE), Deputy Specialist, NABET accredited A category Expert for Socio-economic and Land use, has vast experience in carrying out GIS based studies and social impact assessment for various types of industries & infrastructure projects. He has provided technical assistance throughout the project and co-ordinate the field activities during assessment.

Mr. Sanjay Kumar Jain (FAE (AP, WP, SHW, RH) Technical Director of EQMS having more than 33 years experience to carry out the various impact assessment studies of various industrial, infrastructure projects and carry out various multinational bilateral and multilateral world bank funded project.

Empanelled Expert

Mr. Sanjeev Sharma (FAE AQ, NV) has more than 20 years experience in carrying out EIA studies for various types of AQ and NV related projects.

Mr. Hardik Patel (FAE Geo) has more than 10 years experience in carrying out EIA studies for various types of Geology related projects.

Mr. Yamesh Sharma (FAE Hydrogeology) has more than 40 years experience in carrying out EIA studies for various types of hydrogeology related projects.

Mr. Dipil K Pandey (FAE NV) has more than 30 years experience in carrying out EIA studies for various types of noise & vibration related projects.

Team Members

Mr. Kapil Singh (AP & NV) B. Tech (Environment), having experience of 3 years in carrying out the various studies of EIA like Air Environment, Noise Environment & provides his assistance to carry out the EIA studies in various construction and Industrial Projects. He provides technical assistance during discussions and field work for the projects.

The remaining team members too have the experience of working on various aspects of EIA studies. All have the site experience for collection of the environmental data and have prepared EIA/EMP report

