# EXECUTIVE SUMMARY

## 1.1 INTRODUCTION

M/S Shree Ram Agro India, Karnal (Haryana) proposes project for manufacturing technical grade Pesticide's capacity 300 MTPA at Unit – 2 VPO Nagla Megha, Meerut Road, Khasara No. 36/24 (Khewat No 317/284 & Khatoni No 366),Tehsil- Gharounda, District: Karnal (Haryana) – 132001.

Project Proponent Mr. Satish Gupta (Managing Director) hard core marketing professional and founder of M/S Shree Ram Agro India. He is a dynamic go getter having over 11 year of industrial exposure with excellent marketing/commercial knowledge and business acumen.

Sanction of ToR has been accorded to M/s Shree Ram Agro India by MoEF&CC vide letter no - Vide letter no. IA-J-11011/3/2021-IA-II(I), Dated - 9th January 2021

Environmental baseline study for the proposed project was carried out from 1st December2020 to 28th February 2021

## 1.2 LOCATION OF PROJECT

**TABLE No. 1 : LOCATION AND BRIEF DRSCRIPTION OF PROJECT**

<table>
<tr><th>S. N.</th><th>Parameter</th><th>Description</th></tr>
<tr><td>1.</td><td>Category of project as per EIA notification & Amendment</td><td>The proposed project is categorized under "A" of 5 (b)<br>{"Pesticides industry and pesticides specific intermediates (excluding formulations)</td></tr>
<tr><td>2.</td><td>Name of Company</td><td>M/S Shree Ram Agro India</td></tr>
<tr><td>3.</td><td>Existing Production Capacity (As per earlier EC)</td><td>M/S Shree Ram Agro India is a Formulation Unit (Pesticides and Insecticides), & all Formulation Product has been discontinued with effect from March 2020.
<table>
<tr><th>S.No</th><th>List Of Products</th><th>Existing</th></tr>
<tr><td>1</td><td>Granules</td><td>7 MT/day</td></tr>
<tr><td>2</td><td>Liquid</td><td>1.5 KLD</td></tr>
</table></td></tr>
<tr><td>4.</td><td>Proposed Product</td><td>
<table>
<tr><th colspan="4">List Of Proposed Products</th></tr>
<tr><th>S.No</th><th>Name Of Products</th><th>Category</th><th>Proposed Production MTPA</th></tr>
<tr><td>1</td><td>Clodinafop Propargyl</td><td>Herbicide</td><td>150</td></tr>
<tr><td>2</td><td>Thiamethoxam Technical</td><td>Insecticide</td><td>150</td></tr>
<tr><td colspan="3">Total</td><td>300</td></tr>
</table></td></tr>
<tr><td>5.</td><td>Location</td><td><u>Unit</u> – 2, VPO Nagla Megha, Meerut Road,<br><u>Khasara No.</u>- 36/24 (<u>Khewat No.</u>- 317/284 & <u>Khatoni No.</u>- 366)<br><u>Village-</u> Nagla Megha, Meerut Road<br><u>Tehsil</u>- Gharounda , <u>District:</u> Karnal (Haryana) - 132001</td></tr>
</table>

| | | |
|---|---|---|
| | Latitude & Longitude | <table><tr><th>S.No.</th><th>Latitude</th><th>Longitude</th></tr><tr><td>1.</td><td>29°37'42.83"N</td><td>77°4'46.07"E</td></tr><tr><td>2.</td><td>29°37'42.82"N</td><td>77°4'47.32"E</td></tr><tr><td>3.</td><td>29°37'41.04"N</td><td>77°4'47.28"E</td></tr><tr><td>4.</td><td>29°37'41.05"N</td><td>77°4'46.04"E</td></tr></table> |
| 6. | Total land area of plot | **Total Plot Area** - 19874.263 Sq.Ft |
| 7. | Project cost | **Existing:** 2.26Crore<br>**Proposed**: 5.80 Crore<br>**Total**: 8.06 Crore |
| 8. | Electricity requirement | Total power requirement<br>**Existing:** 80 KVA<br>**Proposed:** 500 KVA<br>**Total:** 580 KVA |
| 9. | Source of electricity | UHBVN (Uttar Haryana Bizali Vitaran Nigam) |
| 10. | D.G. sets | **Existing:** 100 HP, **Proposed:** 200 HP |
| 11. | Water Consumption | Total Water requirement is 23.65 KLD out of which 13.7 KLD will be recycled and 9.95 KLD fresh water will be required. |
| | Source of water | The water requirement of proposed project will be met through bore well. CGWA application for ground water withdrawal has been applied vide application No: HWRA/IND/N/2021/150, Dated 7th February 2022. |
| | Wastewater Generated | 13.03 LKD Industrial wastewater and 5.0 KLD Domestic wastewater will be generated. |
| | Mode of Disposal | ZLD will be maintained in Proposed Project. Treated water will be used in cooling tower/boiler and gardening. |
| 12. | Boiler | Proposed 0.6 TPH |
| 13. | Fuel | **1. Risk Husk Briquette for Boiler:** 2 MT/Day<br>**2.HSD for D.G Set**: 82 Liters/Day |
| 14. | Solid Waste Generation | Hazardous waste will be sent to TSDF. |
| 15. | Nearest Highway | **National Highway 1:** 9.4 KM away from project site in W direction.<br>**State Highway 82**: 0.0 KM away from project site in S direction.<br>**State Highway 8:** 11.47 KM away from project site in NW direction.<br>**State Highway 9**: 11.66 KM away from project site in NW direction.<br>**State Highway 7**: 14.00 KM away from project site in NW direction. |
| 16 | Nearest Railway station | **Karnal**: 12.94 Km away from project site in NW direction<br>**Bazida Jatan**: 11.21 Km away from project site in WSW direction |

| | | |
|---|---|---|
| | | **Gharunda** : 14.69 Km away from project site in SW direction |
| 17 | Nearest Airport | **Indra Gandhi International Airport** - 117.50 KM in S direction |
| 18 | Nearest town, city, district headquarters | **Village:** Nagla Megha 1.34 Km<br>**City:** Karnal 9.2 Km (NW)<br>**District:** Karnal 9.2 Km (NW) |
| 19 | Village Panchayats, Zilla Parishad, Municipal Corporation | Gram Panchayat Nagla Megha khand<br>**District**- Karnal |
| 20 | Reserve Forest and Protected Forest | **Shekhpua RF**- 2.62 KM - NWN |
| 21 | Water bodies within 10 km radius | |

| S. No. | Particulars | Distance (Km), Direction |
|---|---|---|
| 1 | Yamuna river | 2.55 Km - ESE |
| 2 | Khokhari nadi | 6.14 Km - E |
| 3 | Purani Yamuna river | 3.63 Km - S |
| 4 | Hanauri drain | 6.49 Km - NNW |
| 5 | Augmentation canal | 6.03 Km - NW |
| 6 | Indri escap | 3.47 Km - W |
| 7 | Phurlak drain | 9.01 Km - WNW |
| 8 | Bazida drain | 9.09 Km - W |
| 9 | Main drain no.1 | 5.42 Km - SW |
| 10 | Azizpur drain | 8.46 Km- ESE |

**TABLE No. 2.: LIST OF PROPOSED EQUIPMENT.**

| S.No. | Machine Description | Capacity | Proposed | Uses |
|---|---|---|---|---|
| 1. | Glass line Reactor | 8 KL | 2 | Reaction cum Distillation vessel |
| 2. | S.S Reactor | 8 KL | 2 | Reaction cum Distillation vessel |
| 3. | S.S Reactor | 4KL | 2 | Reaction cum Distillation vessel |
| 4. | S.S Reactor | 5KL | 2 | Reaction cum Distillation vessel |
| 5 | Filter Press | 23*18" | 2 | Filtration |
| 6 | Filter Press | 46 X 36" | 1 | Filtration |
| 7 | Rotatory Vacuum Drier | 760 KG | 1 | Vacuum Drying |
| 8 | Notch Filter | 1200 LT | 1 | Filtration |
| 9 | Centrifuge | 24-25 KG | 1 | Centrifuge |
| 10 | Centrifuge | 36-150 KG | 1 | Centrifuge |
| 11 | Centrifuge | 250-300 KG | 1 | Centrifuge |
| 12 | Fluid Bed Drier | 60 KG | 2 | Drying |
| 13 | Hot Water Bath | 1 KL | 1 | Heating |
| 14 | Scrubber System | - | 1 | Scrubbing |
| 15 | Water Ring vacuum pump with booster | 720 mmHg | - | Vacuum Creation |
| 16 | Water Jet vacuum pump with booster | 720 mmHg | - | Vacuum Creation |
| 17 | Steam Ejector | 740 mmHg | - | Vacuum |
| 18 | Chilling Comp | 17 TR | - | - |

| | | | | |
|---|---|---|---|---|
| 19 | Oil Vacuum Pump | 730 mmHg | - | Vacuum |

**TABLE No. 3 : RAW MATERIAL CONSUMPTION**

| SN | Name of Raw Material | MTPA | Physical State | Mode of Storage | Capacity (Ltr/Kg) | One Time Storage | Storage Condition | | Mode of Transportation |
|---|---|---|---|---|---|---|---|---|---|
| **Clodinafop-Propargyl Technical** | | | | | | | **Pressure** | **Temperature** | |
| 1 | Propargyl Alcohol | 45.75 | Liquid | MS Drum | 200 | 50 | Atmo-spheric | Ambient | Road |
| 2 | DMF | 15.375 | Liquid | HDPE Drum | 200 | 25 | Atmospheric | Ambient | Road |
| 3 | Thionyl Chloride | 97.5 | Liquid | CI Drum | 200 | 100 | Atmospheric | Ambient | Road |
| 4 | RHPPA | 90.75 | Solid | HDPE Paper Bag | 50 | 100 | Atmospheric | Ambient | Road |
| 5 | 2,3-Difluoropyridine | 75.75 | Liquid | MS-PTFE Drum | 200 | 42 | Atmo-spheric | Ambient | Road |
| 6 | Pot. Carbonate | 135 | Solid | HDPE Bag | 50 | 75 | Atmo-spheric | Ambient | Road |
| 7 | Methanol | 11.25 | Liquid | HDPE Drum | 200 | 6 | Atmo-spheric | Ambient | Road |
| **Thiamethoxam Technical** | | | | | | | | | |
| 1 | CCMT | 107.25 | Semi-solid | HDPE Drum | 200 | 60 | Atmo-spheric | Ambient | Road |
| 2 | MNIO | 107.25 | Solid | HDPE Paper Bag | 50 | 60 | Atmo-spheric | Ambient | Road |
| 3 | Caustic Flakes | 27.75 | Solid | HDPE Bag | 50 | 15 | Atmo-spheric | Ambient | Road |
| 4 | DMF | 45 | Liquid | HDPE Drum | 200 | 25 | Atmo-spheric | Ambient | Road |
| 5 | HCl 30% | 3 | Liquid | HDPE CAN | 200 | 2 | Atmo-spheric | Ambient | Road |
| 6 | Methanol | 15 | Liquid | HDPE Drum | 200 | 8 | Atmo-spheric | Ambient | Road |

## 1.4 INVESTMENT OF THE PROJECT

The estimated cost of the proposed project is 8.06 Crore (Existing 2.26 Cr. + Propose 5.80 Cr. ) As per MoEF&CC OM dated 30.09.2020, all the activities proposed by PP in provision of CER is now been a part of EMP. The EMP budget is given below:

| S.No. | Particulars | Capital Cost (Lacs) | Recurring Cost (in lacs per annum) |
|---|---|---|---|
| 1 | Air /Noise pollution control (Vent Condenser, Charcoal Absorber) | 20.0 | 2.0 |
| 2 | Water Pollution Control ETP, MEE & RO | 100.0 | 5.0 |
| 3 | Green belt | 2.0 | 0.70 |
| 4 | Occupational Health | 2.5 | 0.75 |
| 5 | Environmental Monitoring | 2.0 | 1.00 |
| 6 | Hazardous waste disposal | 5.0 | 0.50 |
| **Total** | | **131.5 Lacs** | **9.95 lacs** |

| **ACTIVITIES IN PROVISION OF CER** | | |
|---|---|---|
| **S.No** | **Particulars** | **Proposed Budget in Lakhs** |
| **1** | Govt. Sr. Sec School Boy Khatrian Mahalla | 3.0 |
| **2** | Govt. Girls High School Urbal Estate. | 3.0 |
| **3** | Plantation on roads with tree guards and their maintenance | 1.0 |
| **Total** | | **7.0** |

## 1.5 DESCRIPTION OF ENVIRONMENT

The environmental monitoring for Ambient air quality, water quality, soil quality, noise levels, meteorology and traffic survey of the study area extending 5km beyond the site boundary was carried out by M/s Wolkem India Limited (WIL) per the Terms of Reference (ToR) granted on dated - 9TH January 2021 by the Ministry of Environment, Forest & Climate Change (MoEF&CC).

To predict the impact of the proposed activities on the surrounding environment, the current baseline environmental status was studied by collecting the data and carrying out monitoring for the period of December 2020 to February 2021.The environmental monitoring data has been analysed with respect to ambient air quality, water quality, noise levels, soil characteristics, flora & fauna and parameters concerning human interest. On the basis of monitoring data, the relevant impacts on various environmental components were also predicted by using appropriate mathematical models as well as impact assessment techniques. An appropriate environmental management plan was also delineated to minimize the adverse impacts.

### A. AIR ENVIRONMENT

The baseline status of environmental quality has been monitored in post monsoon from 1st

December 2020 to 28th February 2021.in 10 km radial distance from the project site.

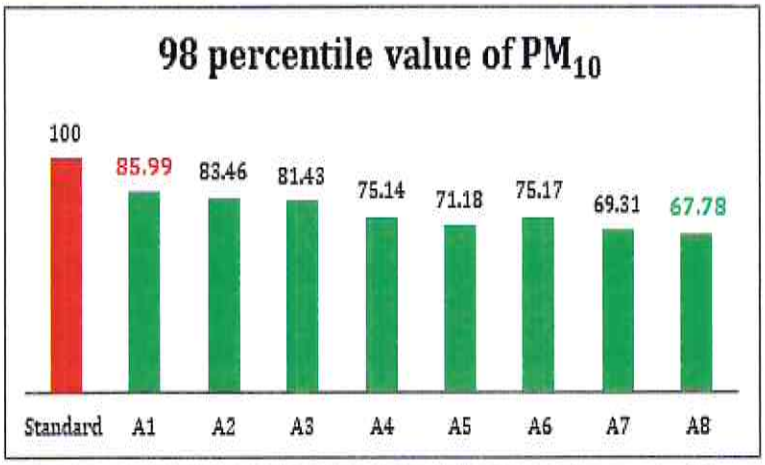
8 monitoring stations were selected for monitoring of Ambient Air quality, Ambient Noise, Soil and Ground water. 3 locations were selected for surface water monitoring. The monitoring stations were selected on the basis of surface influence, demographic influence and meteorological influence.

**TABLE No. 4: AMBIENT AIR QUALITY MONITORING STATIONS**

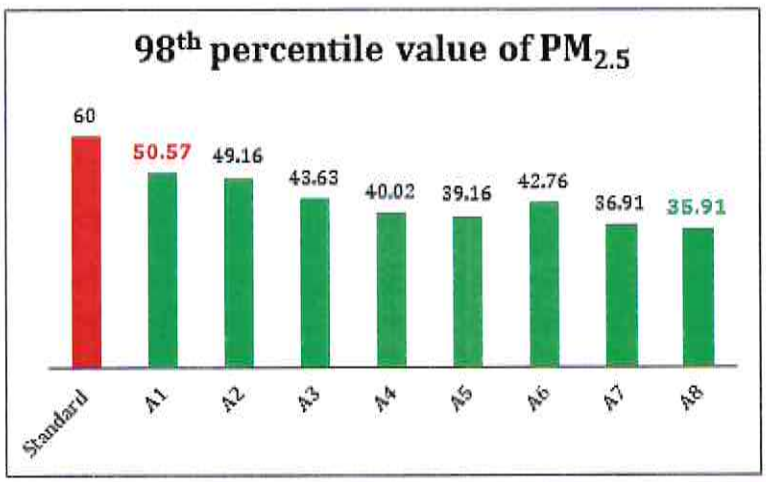
| S.No. | Station | From the plant area | | Coordinate | |
|---|---|---|---|---|---|
| | | Distance in KM | Direction | Longitude | Latitude |
| A1 | Project site | -- | -- | 29°37'41.95"N | 77° 4'46.92"E |
| A2 | D/W direction | 500 m | E | 29°37'38.67"N | 77° 5'2.05"E |
| A3 | Rameshnagar Village | 1.20 | WNW | 29°37'59.93"N | 77° 4'5.86"E |
| A4 | Udpur Village | 4.76 | SE | 29°36'26.22"N | 77°7'23.54"E |
| A5 | Manglaura Oadim Village | 1.92 | SSE | 29°36'39.17"N | 77° 5'20.44"E |
| A6 | Rasupur Kalan Village | 4.89 | NNW | 29°40'13.42"N | 77° 3'55.50"E |
| A7 | Kutali Village | 6.78 | SW | 29°36'1.20"N | 77° 0'59.20"E |
| A8 | Lalupura Village | 6.34 | SSE | 29°34'15.21"N | 77° 5'20.93"E |

***Note:- Air Sampler was placed at height 3-4 m .***

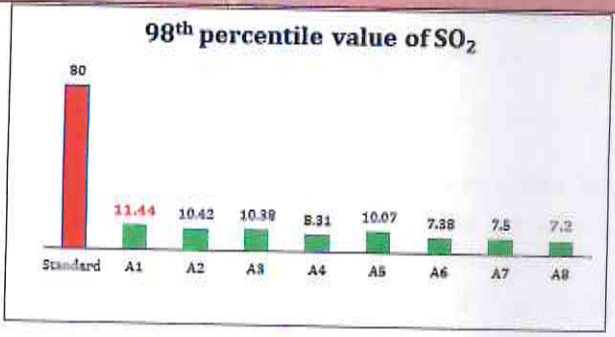
**BASELINE $PM_{10}$ CONCENTRATION V/S NAAQ STANDARDS (in µg/m³)**



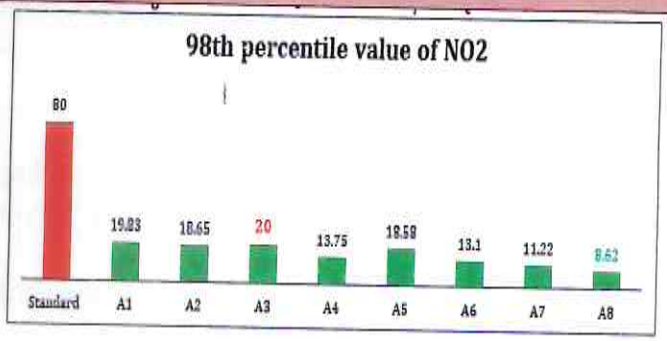

**BASELINE $PM_{2.5}$ CONCENTRATION V/S NAAQ STANDARDS (in µg/m³)**



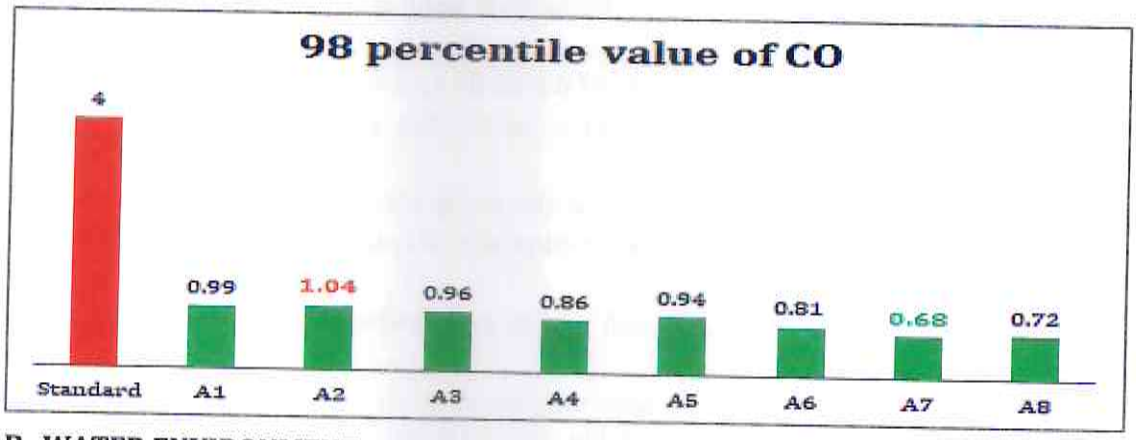
**BASELINE $SO_2$ CONCENTRATION V/S NAAQ STANDARD (in µg/m³)**




**BASELINE $NO_2$ CONCENTRATION V/S NAAQ STANDARD (in µg/m³)**




**BASELINE CO CONCENTRATION V/S NAAQ STANDARDS (in mg/m³)**




## B. WATER ENVIRONMENT

✓ **Ground water quality**

Total 8 ground water sample were collected from 10K.m. radius of project site for check the quality of ground .Location table is given below:

**TABLE No. 5: GROUND WATER MONITORING LOCATIONS**

| S. No | Locations | From the plant area | | Coordinate | |
|---|---|---|---|---|---|
| | | Distance in KM | Direction | Latitude | Longitude |
| **Ground Water** | | | | | |
| **GW1** | Project site | -- | -- | 29°37'41.95"N | 77° 4'46.92"E |
| **GW2** | Andhera Village | 500 meter | E | 29°37'37.01"N | 77° 5'3.44"E |
| **GW3** | Rameshnagar Village | 1.30 | WNW | 29°38'1.18"N | 77° 4'7.60"E |
| **GW4** | Udpur Village | 4.70 | SE | 29°36'24.06"N | 77° 7'29.17"E |
| **GW5** | Manglaura Oadim Village | 1.85 | SSE | 29°36'38.57"N | 77° 5'22.87"E |

| | | | | | |
|---|---|---|---|---|---|
| **GW6** | Rasupur Kalan Village | 4.50 | NNW | 29°40'8.86"N | 77° 4'3.38"E |
| **GW7** | Kutali Village | 6.50 | SW | 29°35'59.40"N | 77° 1'7.56"E |
| **GW8** | Lalupura Village | 6.21 | SSE | 29°34'7.08"N | 77° 5'24.95"E |

- ✓ The pH value of ground water is an important index of acidity or alkalinity. pH value of the sample varies from 6.85 to 7.65in all locations, which is well within the specified standard of 6.5 to 8.5.
- ✓ Colour of ground water sample were found less than 5 hazen at all location in the project area core zone and buffer zone.
- ✓ Total dissolved solids ranges from 230 mg/l to 812 mg/l. Highest total dissolve solids was found at Rasupur Kalan and minimum at Rameshnagar Village . The TDS values were found at all locations within permissible limit as per Indian Standard IS: 10500-2012.
- ✓ The hardness values in ground water of the study area ranges between 104 to 436 mg/l. Hardness values at all locations were within the permissible limit as per Indian Standard IS: 10500- 2012.
- ✓ The chloride values in ground water of the study area ranges between 16 to54 mg/l. Chloride values at all locations were within the acceptable limit as per Indian Standard IS: 10500- 2012.
- ✓ The fluoride content was found well within permissible limit at all location of project area core zone and buffer zone.
- ✓ The analysis results of ground water samples of study area indicate that the quality of ground water is good and suitable for drinking purpose. The water quality at Rameshngar village is very good, Over all, the obtained results are meeting the permissible limit of Indian Standard IS: 10500-2012.

✓ **Surface water quality**

**TABLE No. 6 : SURFACE WATER MONITORING LOCATIONS**

| S. No | Locations | From the plant area | | Coordinate | |
|---|---|---|---|---|---|
| | | Distance in KM | Direction | Latitude | Longitude |
| **Surface Water** | | | | | |
| SW1 | Yamuna River (Upstream) | 5.54 | NE | 29°38'51.99"N | 77° 7'4.43"E |
| SW2 | Yamuna River (Down stream) | 3.22 | SE | 29°35'52.34"N | 77°6'18.21E |
| SW3 | Purani Yamuna River | 5.29 | SW | 29°35'13.04" | 77° 2'35.70"E |

No metallic contamination was found in the river water. The water quality was found to meet the Best Designated Use – 'D' Criteria of CPCB (i.e fit for fish propagation).

## C. NOISE ENVIRONMENT

Eight locations were selected within 10 k.m. Radius of project site for monitoring Noise level locations are tabulated below:-

### Ambient Noise Levels in The Study Area [dB(A)]

**TABLE No.7 : AMBIENT NOISE QUALITY**

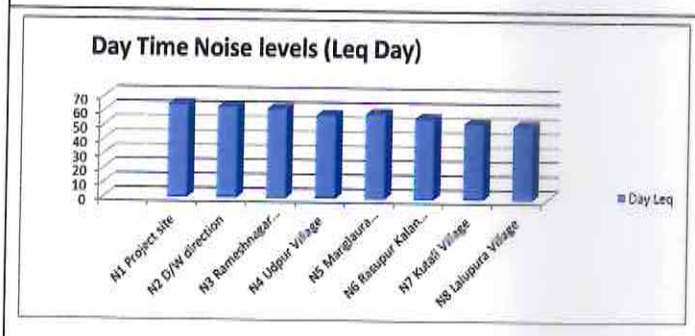
| Station No | Locations | From Project Site | | Latitude | Longitude | Land use |
|---|---|---|---|---|---|---|
| | | Distance in Km | Direction | | | |
| N1 | Project site | -- | -- | 29°37'41.95"N | 77° 4'46.92"E | Commercial |
| N2 | Andhera Village | 500 m | E | 29°37'38.67"N | 77° 5'2.05"E | Residential |
| N3 | Rameshnagar Village | 1.20 | WNW | 29°37'59.93"N | 77° 4'5.86"E | Residential |
| N4 | Udpur Village | 4.76 | SE | 29°36'26.22"N | 77°7'23.54"E | Residential |
| N5 | Manglaura Oadim Village | 1.92 | SSE | 29°36'39.17"N | 77° 5'20.44"E | Residential |
| N6 | Rasupur Kalan Village | 4.89 | NNW | 29°40'13.42"N | 77° 3'55.50"E | Residential |
| N7 | Kutali Village | 6.78 | SW | 29°36'1.20"N | 77° 0'59.20"E | Residential |
| N8 | Lalupura Village | 6.34 | SSE | 29°34'15.21"N | 77° 5'20.93"E | Residential |

The physical description of sound concerns its loudness as a function of frequency. Noise in general is sound, which is composed of many frequency components of various types of loudness distributed over the audible frequency range.

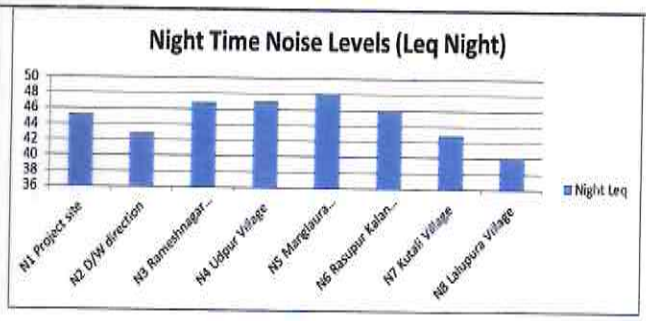
**Table No.8 : Ambient Noise Standards, CPCB**

| Area Code | Category of Area | Noise Levels (dB (A) Leq (Limits) | |
|---|---|---|---|
| | | Day time | Night time |
| A | Industrial Area | 75 | 70 |
| B | Commercial Area | 65 | 55 |
| C | Residential Area | 55 | 45 |
| D | Silence Zone | 50 | 40 |

**GRAPHICAL PRESENTATION OF NOISE RESULTS DAY TIME (Leq)**




**GRAPHICAL PRESENTATION OF NOISE RESULTS NIGHT TIME (Leq)**



## D. SOIL ENVIRONMENT

The soil samples were collected from core zone and buffer zone of project site, were analysed in Environment and Chemical laboratory of M/s Wolkem India Limited, Udaipur accredited by NABL and recognized by MOEF&CC

**TABLE No 9: SOIL MONITORING LOCATION**

| S. No | Locations | From Project Site | | Latitude | Longitude |
|---|---|---|---|---|---|
| | | Distance | Direction | | |
| S1 | Project site | -- | -- | 29°37'41.95"N | 77° 4'46.92"E |
| S2 | Andhera Village | **0.41** | E | 29°37'38.01"N | 77° 5'1.92"E |
| S3 | Rameshnagar Village | **1.25** | WNW | 29°37'58.45"N | 77° 4'4.12"E |
| S4 | Udpur Village | **4.68** | SE | 29°36'23.36"N | 77° 7'16.83"E |
| S5 | Manglaura Oadim Village | **2.19** | SSE | 29°36'35.57"N | 77° 5'20.82"E |
| S6 | Rasupur Kalan Village | **4.72** | NNW | 29°40'8.91"N | 77° 3'55.70"E |
| S7 | Kutali Village | **6.75** | SW | 29°36'2.47"N | 77° 1'2.04"E |
| S8 | Lalupura Village | **6.25** | SSE | 29°34'19.44"N | 77° 5'17.13"E |

| S. No. | Parameter | UNIT | S1 | S2 | S3 | S 4 | S5 | S6 | S7 | S8 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | pH | | 7.36 | 7.29 | 6.92 | 7.08 | 7.20 | 7.14 | 6.98 | 7.54 |
| 2 | Conductivity | µs/cm | 130.6 | 113.6 | 187.6 | 192.2 | 168.5 | 307.6 | 626.1 | 323.6 |
| 3 | Water Holding Capacity | % | 24.66 | 30.38 | 25.56 | 28.78 | 32.44 | 26.88 | 31.08 | 29.22 |
| 4 | Moisture | % | 21.26 | 29.38 | 13.13 | 16.06 | 81.28 | 12.02 | 10.96 | 19.81 |
| 5 | Porosity | % | 36.22 | 38.48 | 37.62 | 38.56 | 39.48 | 36.72 | 40.82 | 39.64 |
| 6 | Bulk Density | gm/cc | 1.17 | 1.08 | 1.12 | 1.10 | 1.15 | 1.09 | 1.04 | 1.08 |
| 7 | Organic Carbon | % | 0.72 | 0.92 | 0.696 | 0.725 | 0.61 | 0.957 | 0.887 | 1.09 |
| 8 | Organic Matter | % | 1.25 | 1.59 | 1.20 | 1.25 | 1.05 | 1.65 | 1.53 | 1.88 |
| 9 | Available Phosphorous | Kg/Hac | 32.69 | 27.19 | 23.08 | 32.73 | 21.96 | 27.34 | 26.92 | 29.81 |
| 10 | Available Nitrogen | Kg/Hac | 142.69 | 228.34 | 112.53 | 119.77 | 109.48 | 273.30 | 106.43 | 211.73 |
| 11 | Sodium as Na | % | 0.009 | 0.014 | 0.011 | 0.012 | 0.006 | 0.018 | 0.020 | 0.025 |
| 12 | Potassium as K | Kg/Hac | 132.73 | 122.58 | 114.81 | 134.19 | 128.68 | 126.17 | 123.09 | 138.38 |
| 13 | Chloride as Cl | mg/kg | 19.02 | 26.03 | 16.02 | 19.02 | 20.02 | 33.04 | 95.10 | 50.06 |
| 14 | Copper as Cu | mg/kg | 22.38 | 20.45 | 18.66 | 19.45 | 29.26 | 21.66 | 19.8 | 16.42 |
| 15 | Cadmium as Cd | mg/kg | 3.20 | 5.60 | 4.80 | 7.60 | 2.90 | 3.40 | 4.10 | 2.20 |
| 16 | Zinc as Zn | mg/kg | 46.10 | 38.80 | 36.50 | 44.42 | 29.90 | 35.40 | 28.20 | 38.94 |
| 17 | Iron as Fe | % | 1.78 | 2.22 | 1.68 | 2.98 | 2.64 | 1.46 | 1.22 | 2.78 |
| 18 | Texture | ..... | Sandy loam | Sandy loam | Sandy loam | Sandy loam | Sandy loam | Sandy loam | Sandy loam | Sandy loam |
| a | Clay | % | 19.52 | 19.99 | 19.86 | 19.56 | 19.46 | 19.97 | 19.02 | 19.75 |
| b | Silt | % | 21.52 | 22.06 | 22.26 | 22.22 | 20.88 | 22.48 | 23.56 | 22.03 |
| c | Sand | % | 58.96 | 57.95 | 57.88 | 58.22 | 59.66 | 57.55 | 57.42 | 58.22 |

## 1.6 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

### Air Environment

Main source of gaseous emission will be fugitive emissions and pollutant into air from the proposed project will be through flue gas stacks attached to boiler, DG set, through process vents .

Adequate stack height of DG set will be maintained and Multicyclone with dry scrubber will be installed at boiler to control emission pollutant under norms. The table is given below for the sources of air pollution and its control.

**TABLE No.10: SOURCES OF AIR POLLUTION AND ITS CONTROL**

| Sr. No | Source of Emission | Type of Emission | Stack Height (meter) | Fuel Name & Quantity | Pollution Control Equipment |
|---|---|---|---|---|---|
| 1 | Boiler | SPM<br>SOx<br>NOx | 30 | Rice Husk Briquettes | **Proposed**:Multi-Cyclone and<br>Dry Scrubber |
| 2 | Process Vent | HCl, $SO_2$, Solvent Vapours<br>Pesticide in the form of P.M. | 15 | - | - Caustic Scrubber<br>- VOC control system<br>- Activated carbon adsorption system |
| 3 | D.G. Set (300 KVA): emergencies use only | SPM<br>SOx<br>NOx | 5 | HSD<br>As and when required | Dust Collector,<br>Silencer |

### Water Environment

**Zero discharge in unite**

The water requirement of proposed project will be met through borewells. CGWA permission for ground water withdrawal has been applied vide application no. HWRA/IND/N/2021/150.dated 7th Feb. 2022.

During operation phase, initially freshwater requirement will be 23.65 KLD. 13.7 KLD treated wastewater will be recycled in cooling tower, boiler, scrubber and reactor washing hence freshwater requirement for proposed project will be 9.95 KLD. No water/ waste water will be discharged inside/outside the unit. ZLD will be maintained.

**Table No. 11: WATER REQUIREMENT**

| Particulars | | Water Requirement KLD | Recycled Water KLD | Fresh Water Requirement KLD |
|---|---|---|---|---|
| **Industrial** | Process | 3.25 | 0.00 | 3.25 |
| | Cooling Tower | 8.50 | 8.5 | 0.00 |
| | Boiler | 1.00 | 1.00 | 0.00 |
| | Scrubber | 2.00 | 2.00 | 0.00 |
| | R. Washing | 2.00 | 2.00 | 0.00 |
| | Lab | 1.00 | 0.00 | 1.00 |
| | Plantation | 0.90 | 0.2 | 0.70 |
| **Domestic** | | 5.00 | 0.00 | 5.00 |
| **TOTAL (KL/DAY)** | | **23.65** | **13.7** | **9.95** |

## WATER BALANCE

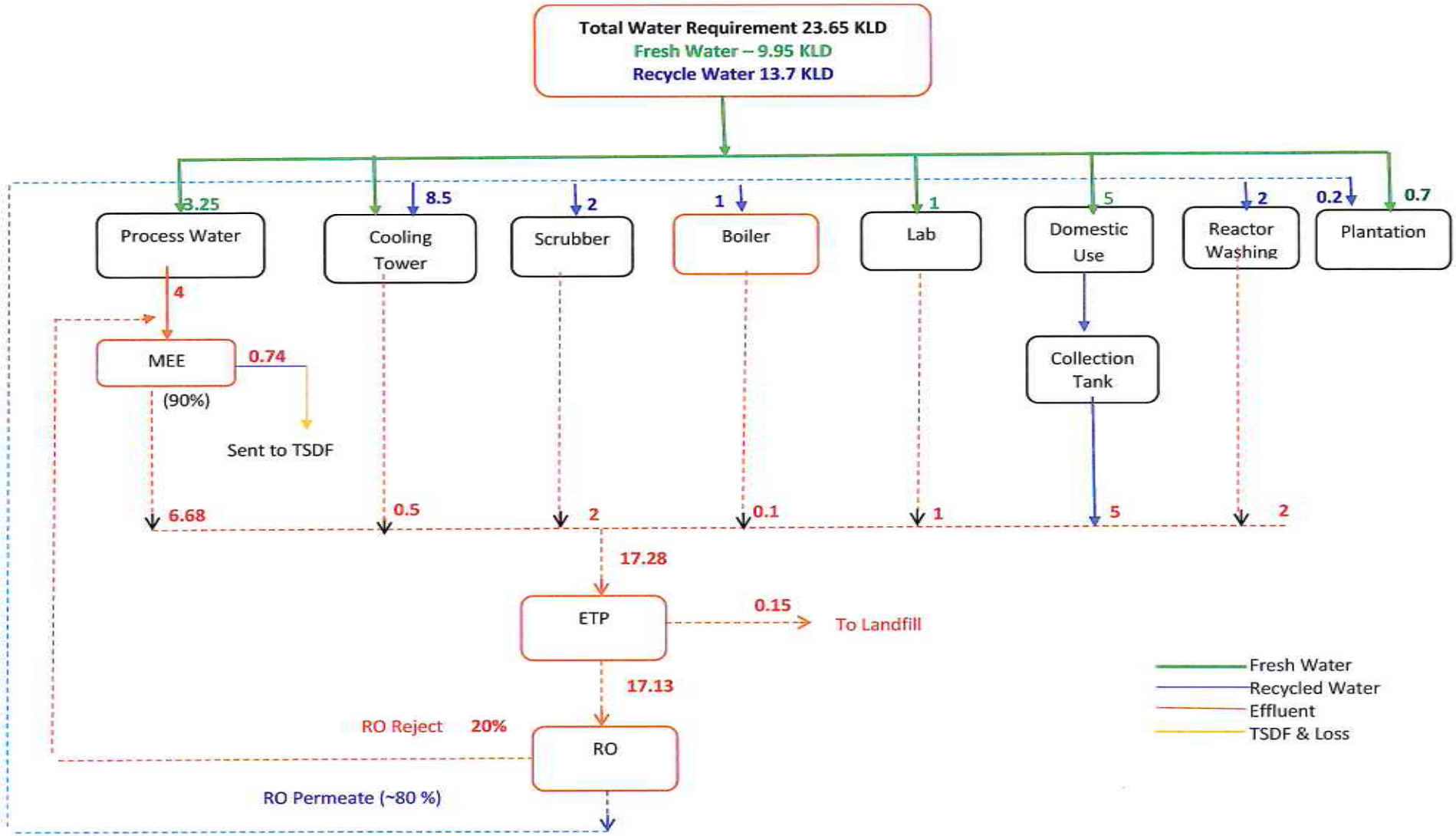
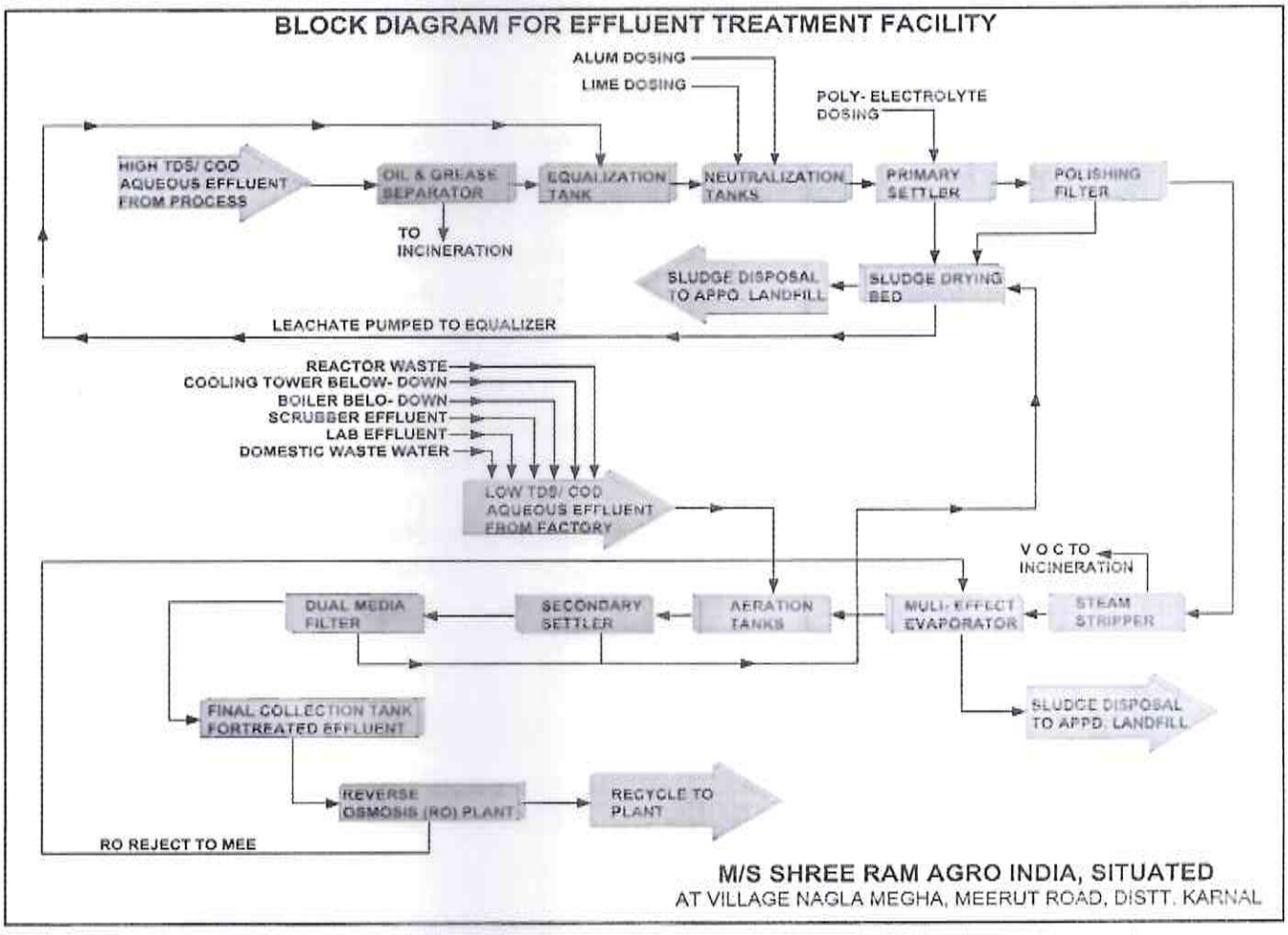


**Table No. 12: DETAILS OF WASTEWATER GENERATION**

| Particulars | | Wastewater Generation | Disposal Method |
|---|---|---|---|
| **Industrial** | **Process** | 4.00 | All High TDS And Low TDS Effluent Will Be Treated At ETP Separately And Send To RO Process. RO - Permeate Will Be Reuse In Cooling Tower, Boiler, Scrubber And Reactor Washing And RO - Reject Will Be Sent To MEE And ZLD Will Be Maintained In Proposed Project |
| | **Cooling Tower** | 0.50 | |
| | **Boiler** | 0.10 | |
| | **Scrubber** | 2.00 | |
| | **R. Washing** | 2.00 | |
| | **RO – Reject** | 3.43 | |
| | **LAB** | 1.00 | |
| **TOTAL INDUSTRIAL (KL/DAY)** | | **13.03** | Domestic Wastewater Will Be Sent To ETP And Mixed With **Stream – B** For Further Treatment. |
| **Domestic** | | **5.00** | |
| **TOTAL (KL/DAY)** | | **18.03** | |

**ETP PROCESS DESCRIPTIONS AND FLOW DIAGRAM**



Wastewater generated from the proposed pesticide manufacturing plant will be segregated into separate streams depending on their pollution levels as given in wastewater treatment methodology.

**Hazardous Waste Management**

Entire quantity of hazardous waste will be handled and disposed as per Hazardous Waste (Management, Handling and Trans boundary movement) Rules'2016, amended time to time. Different categories sloid and liquid hazardous waste will be generated. SHE department shall insure to follow CPCB guideline during the collection, storage, handling, transportation and disposal of each category hazardous waste.

**Table No. 13 : HAZARDOUS & SOLID WASTE GENERATION QUANTITY AND MODE OF DISPOSAL**

| S. No. | HW/Solid Waste | Category | Quantity | Disposal Method |
|---|---|---|---|---|
| A. Hazardous Waste MTPA | | | | |
| 1 | Process Residue | 28.1 | 33.00 | TSDF |
| 2 | ETP Sludge | 35.3 | 45.00 | TSDF |
| 3 | MEE Sludge | 35.3 | 222.00 | TSDF |
| 4 | Empty | ..... | 100 No/M | Sale to Authorized |
| 5 | Used/spent oil | 5.1 | 50 L/M | Sale to Authorized |
| B. Solid Waste MTPA | | | | |
| 7 | Fly Ash (Boiler) | ..... | 115.00 | Sale to bricks manufacturer |

**Noise Control Measures**

The main sources of noise pollution will be from operation of boiler, D.G. set, process plant, APCM and other machineries etc. However, the noise transmitted outside the plant boundary will be low because most of the noise generating equipment's will be in closed structures provided with acoustic enclosure. Greenbelt will be developed around the periphery of the plant. Ear muff, ear plug will be provided to all workers working at noisy area.

## 1.7 Green Belt Development

The main objective of the green belt is to provide a barrier between the plant and surroundings areas. Total 19874.263 sq. feet land area is available at site; out of this area about 6716.413 sq. feet (33 %) area will be covered as greenbelt and other forms of greenery. Also, greenbelt will increase the aesthetic beauty of the surrounding area. Local plants will be preferred for the plantation.

### 1.8 ENVIRONMENT MONITORING PROGRAMME

The details of monitoring are given below table:

**TABLE No.14: ENVIRONMENT MONITORING PROGRAMME**

| Nature of Analysis | Frequency of analysis | Parameters |
|---|---|---|
| Wastewater | Monthly by external agency or as per SPCB Guidelines | pH, COD, BOD,TDS, SS, Oil & Grease, etc. |
| Stack Monitoring of each stack | Monthly by external agency or as per SPCB Guidelines | PM, $SO_2$, NOX, |
| Ambient Air | Monthly for 24 hours or as per the statutory conditions by external agency | $PM_{10}$, $PM_{2.5}$, $SO_2$, $NO_X$, HCL, CO |
| Noise level | Monthly as per the statutory conditions by external agency | Near Main gate, Near. boiler, Process area, Near ETP, Near D.G. etc. |
| Work zone area monitoring | Monthly by external agency | RPM, VOC, Acid Fume |
| Health check-up of workers | As per the statutory guideline. | |

### 1.9 QUALITATIVE RISK ANALYSIS

Risk analysis and study have been carried out for identification of hazards, selection of credible scenarios, Risk Mitigation measures etc. All the hazardous chemicals will be stored and handled as per MSDS guidelines.

### 1.10 PROJECT BENEFITS

The proposed project will become beneficial to the surrounding area or community in terms of infrastructural development, Social development, employment and other tangible benefits. The proposed project has a potential for employment of skilled, semi-skilled and unskilled manpower during construction phase as well as operational phase.

### 1.11 ENVIRONMENTAL MANAGEMENT PLAN

**Overall objective of EMP**

**Prevention:** Measures aimed at impeding the occurrence of negative environmental impacts and/or preventing such an occurrence having harmful environmental impacts.

**Preservation:** Preventing any future actions that might adversely affect an environmental resource or attribute.

**Minimization:** Limiting or reducing the degree, extent, magnitude, or duration of adverse impacts.

## 1.12 CONCLUSION

Based on the study it is concluded that,

- Total wastewater generation shall be 18.03 KLD will be treated at ETP, MEE and RO and will be reuse in cooling tower.
- ZLD will be maintained in Proposed Project.
- Multi-Cyclone with dry scrubber will be installed at boiler. Hence pollutants will be well within the prescribed norms.
- Solvent recovery system shall be related to VOC control system and finally to activated carbon adsorption system will be provided to avoid release any solvent vapours/fumes in the atmosphere. In any emergency, carbon adsorption system will be disconnected, and vapours diverted to incinerator.
- To prevent Fugitive emission, various steps will be taken like regular sprinkling of water and paved road.
- Adequate arrangement for handling and disposal of Hazardous solid waste will be made.
- Fire protection and safety measures will be provided to take care of fire and explosion hazard.
- Suggestions of qualitative risk analysis study will be followed to minimize accidents and for safe operations.
- Recommendations suggested in Environmental Management Plan will be followed to minimize the impact of proposed project.

Overall, direct and indirect employment opportunities, improvement in basic infrastructures of the area will be obtained due to proposed project will be observed with negligible impact on environment.

It can be concluded that on positive implementation of mitigation measures and environmental management plan during the construction and operational phase, there will be negligible impact on the environment.

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