

TERMS OF REFERENCE

The following terms of reference will be followed while preparing the Draft EIA report. Baseline environmental status will be monitored for one Non Monsoon Season.

1. LOCATIONAL DETAILS

The project location will be shown on a map depicting the District and State in India.

A key map showing the vicinity of the project site depicting the nearest feature will be included.

The study area map covering an area of 10 km radius around the project site will be included to indicate the physical features.

2. PROJECT RELATED ACTIVITIES

The following projects related activities will be studied to identify the interaction of various operations with environmental components :

- Production Capacity
- Mining Methodology
- Landuse Pattern Of The Mining Lease Area - A site plan showing the areas earmarked for various components of the project will be incorporated.
- Mine Geometry
- Waste /Subgrade Mineral Generation
- Anticipated Life Of Mine
- Conceptual Plan.
- Extent Of Mechanization

Anticipated interaction of Mine activities with environmental components and applicable standard for compliance will be studied

Considering the environmental setting of the project, project activities & their interaction, environmental regulations & Standards, following environmental attributes are incorporated in EIA study

3. ENVIRONMENTAL BASELINE DATA GENERATION

Baseline environmental data will be collected for one season for one season other than monsoon to study existing status of significant environmental parameters within the impact zone with respect to air, water, noise, soil and socioeconomic components of environment. The aspects covered are :

3.1 METEOROLOGY

Regional meteorological data will be collected from the nearest IMD station.

Micro meteorological data on hourly basis will be collected by auto weather monitoring station. The following meteorological parameters will be recorded:

- Wind speed,
- Wind direction,
- Temperature,
- Relative humidity,
- Rainfall
- Solar radiation

3.2 AMBIENT ENVIRONMENT

Ambient air quality data will be collected at 8 stations as per CPCB/MOEF guidelines. The network of AAQ stations will be decided based on the following

- a) Topography / Terrain of the study area
- b) Populated areas within the study area
- c) Residential and sensitive areas within the study area.
- d) Magnitude of the surrounding industries
- e) Representation of regional background levels
- f) Representation of cross sectional distribution in downward direction.

The following parameters will be monitored using High volume samples and respirable dust samplers at each station :

- a. Respirable particulate Matter(PM10&PM2.5)
- b. Sulphurdioxide
- c. Oxides of Nitrogen
- d. Carbon monoxide

3.3 NOISE ENVIRONMENT

Noise Levels will be measured at 8 locations to identify the Impact due to the existing sources on the surroundings in the study area

The collected data will be processed to obtain the day and night equivalent values for checking the compliance with Noise standards

3.4 WATER ENVIRONMENT

The following areas will be covered pertaining to water environment

- 3.4.1 Surface Water Sources
- 3.4.2 Ground Water Sources
- 3.4.3 Hydrogeology Of 10-Km Area (Buffer Zone)
- 3.4.4 Nature Of Occurrence Of Ground Water

3.5 LAND ENVIRONMENT

The following areas will be covered pertaining to Land environment

- 3.5.1 Physiography Of The Area
- 3.5.2 Regional Landscape Setting
- 3.5.3 Geological Setting Of The Area
- 3.5.4 Hydrology
- 3.5.5 Land Use Pattern of core and buffer zones
- 3.5.6 Soil Quality
- 3.5.7 Fertility Of Land
- 3.5.8 Forests
- 3.5.9 Flora And Fauna

3.6 SOCIO ECONOMY

- 3.6.1 Details on economic status of various villages within an area of 10 km around the Mine site will be collected.
- 3.6.2 Information on amenities following aspects in the area will be collected to determine the developmental activities to be undertaken by project authorities in future.
 - Demography Of The Study Area
 - Occupational Pattern
 - Social Setting
 - Agricultural Pattern
 - Animal Husbandry
 - Infrastructural Facilities
 - Social Setup

4. IDENTIFICATION AND QUANTIFICATION OF ENVIRONMENTAL IMPACTS

The areas likely to cause impacts will be identified and the identified impacts will be quantified. The quantified incremental impacts will be superimposed on the baseline status of various environmental components to have a overall scenario. The overall scenario estimated will be checked for compliance with various statutory requirements/standards. Details of quantification procedure to each of environmental components are given below

4.1 Air Environment

- 4.1.1 Identification of various Sources Of Dust Emission
- 4.1.2 Quantification of Emission Details

- 4.1.3 Processing of metrological data as per the modeling requirement
- 4.1.4 Quantification of environmental impacts for will be done by employing mathematical model AERMOD Model for quantification of the impacts evaluation of the impacts based on the applicable statutory norms.

4.2 Noise Environment

- 4.2.1 Various noise sources will be identified
- 4.2.2 The noise levels in the vicinity of the process units due to various sources will be estimated using point source model

4.3 Water, Land, Biological And Socio-Economic Environments

In case of water, land, biological and socio-economic environments, the impacts will be assessed based on scientific knowledge and judgements of the core experts.

The areas covered include :

4.3.1 Water Environment

- Impact On Surface Water Bodies
- Impact On Ground Water Table
- Impact On Drainage Pattern
- Impact On Hydro Geology
- Impact Due To Siltation
- Water Consumption And Wastewater Generation

4.3.2 Land Environment

- Top Soil Generation
- Sub Grade Generation
- Solid Waste Generation
- Impact On Land Use
- Impact On Landscape

4.3.3 Socio-Economic Environment

- impact on the community in the vicinity
- impact on the Occupational Health And Safety

5.0 FORMULATION OF ENVIRONMENTAL MANAGEMENT PLAN

Based on the existing environmental status & quantified impacts, a detailed Environmental Management Plan will be formulated for implementation. The detailed environmental monitoring programme drawn for implementation by proponent during operational phase will include the following.

Environmental Management Plan – Operational Phase

- Air Pollution Control Measures
- Noise Pollution Control Measures
- Water and Wastewater Management
- Wastewater Generation and Disposal
- Solid Waste Management
- Energy Conservation Measures
- Green Belt Development
- Social Welfare measures
- Occupational Safety & Health Management
- Post Project Monitoring Programme detailing the Environmental Cell, Environmental Monitoring and Environmental Laboratory
- Expenditure on The Environmental Management Plan

6.0 DISASTER MANAGEMENT PLAN

Based on the nature of operations involved, a disaster management plan will be formulated

The additional Terms of Reference if any provided by experts of MOEF & CC will be incorporated and Draft EIA report will be finalized for taking Public Consultation.

After Public consultation, the final EIA will be prepared incorporating the Public consultation and the same will be submitted to MOEF & CC for appraisal.