

## **ENVIRONMENTAL MONITORING REPORT**



*at*

Danapur Village, Hospet Taluk,  
Vijayanagara District, PIN-583222, Karnataka.

### **Stage – I**

### **NOVEMBER -2021**

**Prepared by**



**GLOBAL ENVIRONMENT & MINING SERVICES**  
**NABL & MOEF RECOGNIZED LABORATORY**

(Consulting Engineers, Mine Designers, Geologists & Surveyors)  
3<sup>rd</sup> main road, Basaveswara badavane

**HOSAPETE – 583201, Dist., Vijayanagara (Karnataka)**

Tel : 08394 229433 & 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

**PREFACE**

The industries should monitor environmental parameters as per the frequency and locations given in the CFE/CFO. And the same should be submitted on every month to the respective pollution control board.


As part of the conditions and inherent concern on health of the employees and surroundings *M/s. BMM Ispat Ltd.*, as appointed *M/s. Global Environment & Mining Services, Hosapete*, to carry out the environmental pollution monitoring on AAQ Monitoring, Fugitive monitoring, Noise Monitoring, Water Analysis & Stack monitoring pollution and submit the same to the Pollution Control Board.

Accordingly, *M/s. Global Environment & Mining Services, Hosapete*, carried out the pollution monitoring as per the standard sampling methods prescribed by CPCB, for AAQ Monitoring, Fugitive monitoring within the plant, Stack Monitoring & Personal Dust Sampling as per the CFO. These monitoring has been carried out in a frequency as mentioned in the CFO and the same report is being submitted to the Board.

We sincerely thank to officials of *M/s. BMM Ispat Ltd.*, for their valuable co-ordination & support during the sampling and reporting.

**for GLOBAL Environment & Mining Services**

**Place: Hosapete**  
**Date: 06.12.2021**

  
**K. Ramakrishna Reddy**  
**(Technical Manager)**



## 1.0 INTRODUCTION

M/s. BMM Ispat Ltd, (BMMIL) is a 2.0 million tons integrated steel plant, manufacturing steel with its state of art in advanced technology and protecting environment. It is committed produce quality product, in environmentally friendly technology. Adopting sufficient air pollution control equipment's, recycling and reusing all the water with 'Zero' discharge facility, generating valuable electric power with waste heat recovery boilers (WHRB) and resource optimizing and minimizing the energy needs through re-utilizing char for CFBC boilers.

M/s. BMM ISPAT Ltd., Presently operating the following units under Stage-I units (Manufacturing units coming under 2.0 MTPA integrated steel plant is monitored and are reported separately);

Sl.No.	Units	Capacity
1	Beneficiation Plant	1.3 MTPA
2	Pellet Plant	1.2 MTPA
3	Sponge Iron Division -1	2 x 100 TPD
4	Induction furnace (billets)	9000 tons/month
5	Rolling Mill (TMT rods)	9000 tons/month
6	Captive Power Plant	25 MW

The report includes environmental monitoring data collected at above site and its surrounding areas, for the month of **NOVEMBER-2021**. The Parameters monitored are:

- ❖ Ambient air quality
- ❖ Fugitive dust level
- ❖ Stack emission
- ❖ Ambient Noise Level
- ❖ Water quality



## **2.0 SCOPE AND METHODOLOGY**

### **2.1 PREAMBLE**

The scope of the study and the present report covers the detailed characterization of the existing environmental status in and around the plant area for major environmental components viz. Ambient & work zone air quality, Fugitive Emission, Noise level and water quality & Stack Emission.

### **2.2 AMBIENT AIR QUALITY**

To assess the ambient air quality status, monitoring stations were identified 6 Location plant site. Work zone air monitoring stations were identified in the major work spots. Based on the production activities the parameters chosen for Ambient air quality. Were Particulate Matter PM10, Particulate Matter (size less than 2.5 $\mu$ m) PM2.5.

#### **2.2.1 PARTICULATE MATTER (PM10) (size less than 10 $\mu$ m).**

##### **Purpose**

The purpose of this protocol is to provide guidelines for monitoring and analysis of Particulate Matter PM10 in ambient air

**Reference Method:** IS 5182 Part 23 Method of Measurement of Air Pollution: Respirable Suspended Particulate Matter (PM10) cyclonic flow technique.

##### **Principle of the method**

Air is drawn through a size-selective inlet and through a 20.3 X 25.4 cm (8 X 10 in) filter at a flow rate, which is typically 1132 L/min. Particles with aerodynamic diameter less than the cut-point of the inlet are collected, by the filter. The mass of these particles is determined by the difference in filter weights prior to and after sampling. The concentration of PM10 in the designated size range is calculated by dividing the weight gain of the filter by the volume of air sampled.

##### **Sampling**

Field Sampling - Tilt back the inlet and secure it according to manufacturer's instructions. Loosen the faceplate wing nuts and remove the faceplate. Remove the filter from its jacket and center it on the support screen with the rough side of the filter facing upwards. Replace the faceplate and tighten the wing nuts to secure the rubber gasket against the filter edge. Gently lower the inlet. For automatically flow-controlled units, record the designated flow rate on the data sheet. Record the reading of the elapsed time meter. The specified length of



sampling is commonly 8 hours or 24 hours. During this period, several reading (hourly) of flow rate should be taken. After the required time of sampling, record the flow meter reading, take out the filter media from the sampler, and put in a container or envelope.

### **Analysis**

**Filter inspection:** Inspect the filter for pin holes using a light table. Loose particles should be removed with a soft brush. Apply the filter identification number or a code to the filter if it is not a numbered. Condition the filter in conditioning room maintained within 20-30° C and 40-50% relative humidity or in an airtight desiccator for 24 hours. Take initial weight of the filter paper (Wi) before sampling. Condition the filter after sampling in conditioning room maintained within 20-30° C and 40-50% relative humidity or in an airtight desiccator for 24 hours. Take final weight of the filter paper (Wf).

#### **2.2.2 Particulate Matter (PM2.5) (size less than 2.5µm).**

### **Purpose**

The purpose of this protocol is to provide guidelines for monitoring and analysis of Particulate Matter PM2.5 in ambient air.

**Reference Method:** USEPA 2001 Method of Measurement of Air Pollution: Particulate Matter (PM2.5) cyclonic flow technique.

### **Principle**

An electrically powered air sampler draws ambient air at a constant volumetric flow rate (16.7 lpm) maintained by a mass flow / volumetric flow controller coupled to a microprocessor into specially designed inertial particle-size separator (i.e., cyclones or impactors) where the suspended particulate matter in the PM2.5 size ranges is separated for collection on a 47 mm polytetrafluoroethylene (PTFE) filter over a specified sampling period. Each filter is weighed before and after sample collection to determine the net gain due to the particulate matter. The mass concentration in the ambient air is computed as the total mass of collected particles in the PM2.5 size ranges divided by the actual volume of air sampled, and is expressed in µg/m<sup>3</sup>. The microprocessor reads averages and stores five-minute averages of ambient temperature, ambient pressure, filter temperature and volumetric flow rate. In addition, the microprocessor calculates the average temperatures and pressure, total volumetric flow for the entire sample run time and the coefficient of variation of the flow rate.

### 2.2.3 Sulphur Dioxide (SO<sub>2</sub>).

**Purpose:** The purpose of this protocol is to provide guidelines for monitoring and analysis of Sulphur dioxide in ambient air.

**Reference Method:** Modified West & Gaeke Method (IS 5182 Part 2 Method of Measurement of Air Pollution: Sulphur dioxide).

Sulphur dioxide from air is absorbed in a solution of potassium tetrachloromercurate (TCM). A dichlorosulphitomercurate complex, which resists oxidation by the oxygen in the air, is formed. Once formed, this complex is stable to strong oxidants such as ozone and oxides of nitrogen and therefore, the absorber solution may be stored for some time prior to analysis. The complex is made to react with para-rosaniline and formaldehyde to form the intensely coloured pararosaniline methyl sulphonic acid. The absorbance of the solution is measured by means of a suitable spectrophotometer.

#### Sampling

Place 30 ml of absorbing solution in an impinger and sample for four hours at the flow rate of 1 L/min. After sampling measure the volume of sample and transfer to a sample storage bottle.

#### Analysis

Replace any water lost by evaporation during sampling by adding distilled water up to the calibration mark on the absorber. Mix thoroughly, pipette out 10 ml of the collected sample into a 25 ml volumetric flask. Add 1 ml 0.6% sulphamic acid and allow reacting for 10 minutes to destroy the nitrite resulting from oxides of nitrogen. Add 2 ml of 0.2% formaldehyde solution and 2 ml pararosaniline solution and make up to 25 ml with distilled water. Prepare a blank in the same manner using 10 ml of unexposed absorbing reagent. After a 30 min colour development interval and before 60 minutes, measure and record the absorbance of samples and reagent blank at 560 nm. Use distilled water; not the reagent blank, as the optical reference.



#### 2.2.4 Nitrogen Di Oxide (NO<sub>2</sub>):

##### Purpose

The purpose of this protocol is to provide guidelines for monitoring of nitrogen dioxide in ambient.

##### Principle of the method

Modified Jacobs & Hochheiser Method (IS 5182 Part 6 Methods for Measurement of Air Pollution: Oxides of nitrogen)

Ambient nitrogen dioxide (NO<sub>2</sub>) is collected by bubbling air through a solution of sodium hydroxide and sodium arsenite. The concentration of nitrite ion (NO<sub>2</sub>) produced during sampling is determined calorimetrically by reacting the nitrite ion with phosphoric acid, sulfanilamide, and N-(1-naphthyl)-ethylenediamine dihydrochloride (NEDA) and measuring the absorbance of the highly coloured azo-dye at 540 nm.

#### 2.2.5 Ozone (Chemical method)

##### Purpose

The purpose of this protocol is to provide guidelines for monitoring of ozone in ambient air.

##### Principle of the method

Micro-amounts of ozone and the oxidants liberate iodine when absorbed in a 1% solution of potassium iodine buffered at pH 6.8 ± 0.2. The iodine is determined spectrophotometrically by measuring the absorption of tri-iodide ion at 352 nm.

##### Sampling

Place 10 ml of absorbing solution in a standard impinger and sample for one hour at the flow rate of 1 L/min. Do not expose the absorbing reagent to direct sunlight. After sampling measure the volume of sample and transfer to a sample storage bottle.

##### Analysis

If, appreciable evaporation of the absorbing solution occurs during sampling, add water to bring the liquid volume to 10 ml. Within 30 to 60 minutes after sample collection, read the absorbance in a cuvette at 352 nm against a reference cuvette containing distilled water. Measure the absorbance of the unexposed reagent and subtract the value from the absorbance of the sample.



#### 2.2.6 Ammonia (NH<sub>3</sub>)

##### Purpose

The purpose of this protocol is to provide guidelines for monitoring of ammonia in ambient air.

##### Principle of the method

Indophenol method Ammonia in the atmosphere is collected by bubbling a measured volume of air through a dilute solution of sulphuric acid to form ammonium sulphate. The ammonium sulphate formed in the sample is analyzed calorimetrically by reaction with phenol and alkaline sodium hypochlorite to produce indophenol. The reaction is accelerated by the addition of Sodium Nitroprusside as catalyst.

##### Sampling

Place 10 ml of absorbing solution in an impinger and sample for one hour at the flow rate of 1 to 2 L/min. After sampling measure the volume of sample and transfer to a sample storage bottle

##### Analysis

Transfer contents of the sample bottle to a 25 ml glass stopper graduated cylinder. Maintain all the solutions and sample at 25° C. Add 2 ml buffer. Add 5 ml of working phenol solution, mix, and fill to about 22 ml. Add 2.5 ml of working hypochlorite solution and rapidly mix. Dilute to 25 ml, mix and store in the dark for 30 minutes to develop colour. Measure the absorbance of the solution at 630 nm on a spectrophotometer using 1 cm cells. Prepare a reagent blank and field blank and measure the absorbance as done in the analysis of samples.

#### 2.2.7 Benzo(a)Pyrene

##### Purpose

The purpose of this protocol is to provide guidelines for monitoring of Benzo (a) Pyrene (BaP) in ambient air.

##### Principle of the Method

It is based on BIS method IS 5182 (Part 12):2004 and USEPA method (TO-13). This method is designed to collect particulate phase PAHs in ambient air and fugitive emissions and to determine individual PAH compounds using capillary gas chromatograph equipped with flame ionization detector. It is a high volume (1.2m<sup>3</sup>/min) sampling method capable of detecting sub.ng/m<sup>3</sup> concentration of

PAH in 24 hours sample (i.e., collected in 3 shifts of 8 hour each with 480 m<sup>3</sup> sampling volume of air)

#### **Sampling**

24 hr. sampling using PM10 high volume sampler with 8 hourly samples using EPM 2000 glass fibre or equivalent filter.

#### **Sample Processing**

**Extraction:** Filter papers (half of all the filters papers collected in a day) are cut into strips using scissors and transfer to 250 ml beaker. Add ~50 ml. of Toluene (GC/HPLC grade). These samples are extracted with toluene using ultra sonic bath for about 30 minutes. Repeat the procedure twice (50ml x 2 times) for complete extraction. Alternatively, sample can be extracted using Soxhlet extraction apparatus for about 8 hr. with Toluene and repeat it twice.

#### **Filtration**

Filter the extracted samples with Whatman filter paper no.41 containing 2 gm of Anhydrous Sodium Sulphate (to remove moisture).

#### **Sample injection**

Take 2 $\mu$ l of sample from the amber vial using standard gas tight syringe and inject in the Capillary GC-FID instrument for analysis. Record the resulting concentration of each PAH compound including B(a)P. A 10ng/ $\mu$ l concentration B(a)P or other PAH standards are to be injected in GC/FID instrument with every batch of samples. As a control Internal Standard of 10 ng/ $\mu$ l conc. is added to each sample prior to the analysis in case of internal calibration is used.

#### **2.2.8 Benzene**

Samples collected through active sampling (sorbent tubes) are extracted or desorbed by conventional solvent (generally 1-5 ml of carbon disulphide) using ultrasonication for 15 min to remove analyte from the sorbent material. Desorbed samples are analyzed using gas chromatograph (GC) fitted with capillary column and flame ionization detector (FID). A single tube may provide enough samples to permit several analyses.

#### **Principle of the Method**

IS 5182 (Part 11): 2006, The charcoal tubes are available in different sizes and contain varying amount of activated charcoal. The ambient air is sucked through the tube using a low flow sampler used for collection of BTX sample in a way that results in an enrichment of the relevant substances in the activated charcoal. Desorption of the adsorbed benzene is done using carbon disulphide (CS<sub>2</sub>). The



substances desorbed in the CS<sub>2</sub> are analyzed by capillary gas chromatography. A flame ionization detector (FID) is used for analysis while quantification is performed using the internal/external standard.

#### **Gas Chromatograph**

Any suitable gas chromatograph with flame ionization detector (FID) with fused silica capillary columns having a length of 25 m or more, an internal diameter of 320  $\mu$ m or below and with a stationary phase film thickness less than 1.5  $\mu$ m as follows or equivalent may be recommended.

#### **Sampling**

Selection of Sorbent Tube - Samples are collected in glass sampling tube filled with a activated charcoal (coconut shell), Chromo sorb 106 or other suitable adsorbent.

#### **Analytical Procedure**

Samples collected through active sampling (sorbent tubes) are extracted or desorbed by conventional solvent (generally 1-5 ml of carbon disulphide) using ultrasonication for 15 min to remove analyte from the sorbent material. Desorbed samples are analyzed using gas chromatograph (GC) fitted with capillary column and flame ionization detector (FID). A single tube may provide enough samples to permit several analyses.

#### **2.2.9 Carbon Monoxide (CO)**

##### **Principle:**

Samples containing carbon monoxide in the range of 0 to 100 mg/l are analyzed on a non-dispersive infrared absorption gas analyser, namely, an electro-optical spectrophotometer with no spectral dispersion component. It may consist of a single or double source of infrared energy and one or more infrared detectors separated by an optical cell or cells through one or more of which the sample flows, whereby the specific spectral absorption of the component of interest is determined.

##### **Non dispersive Infrared (NDIR) Gas Analyser**

The apparatus shall be constructed so as to be suitable for operating within the temperature range of 15°C to 40°C and in a relative humidity range of 0 to 90 percent. The apparatus shall embody facilities for the analysis of continuously applied sample or a discrete sample of volume of 2.0 litres. In the later case the purification train shall be of such a design and dead volume that 2.0 litres is



adequate for its proper flushing out. The apparatus shall include facilities for the visual inspection of results and also for their recording. The scale shall be divided into steps of 1.0 percent full scale division (fsd).

Though the basic instrument recommended is for (0 to 100) mg/l range, for samples of higher mg/l range the instrument may be used with proper dilution and conditioning of the samples.

#### **2.2.10 Lead (Pb), Nickel (Ni) & Arsenic (As)**

##### **Purpose**

The purpose of this protocol is to provide guidelines for monitoring of Lead (Pb), Nickel (Ni) & Arsenic (As) in ambient air.

##### **Principle of the method**

The Atomic Absorption Spectroscopy (AAS) technique makes use of absorption spectrometry to assess the concentration of an analyte in the sample. The method is based on active sampling using PM10 Respirable Dust Sampler and then sample analysis is done by atomic absorption spectrophotometer.

##### **Sampling procedure**

Tilt back the inlet and secure it according to manufacturer's instructions. Loosen the face-plate wing-nuts and remove the face plate. Remove the filter from its jacket and centre it on the support screen with the rough side of the filter facing upwards. Replace the face-plate and tighten the wing-nuts to secure the rubber gasket against the filter edge. Gently lower the inlet. For automatically flow-controlled units, record the designated flow rate on the data sheet. Record the reading of the elapsed time meter. The specified length of sampling is commonly 8 hours or 24 hours. During this period, several reading (hourly) of flow rate should be taken. After the required time of sampling, record the flow meter reading and take out the filter media from the sampler and put in a container or envelope.

#### **2.3 NOISE LEVELS**

##### **Measuring Equipment**

The measurements should be made with a sound level meter as specified in IS :9779-1981 The A-weighting network and fast response should be used. The sound level should be measured at the place and time of the annoyance.

### **Conditions of Measurement**

Ambient and work zone Noise level measurement was carried out using a sound level meter (Equinox-107) during day and night times. The measurements were carried out 1 m away from the source and 1 m away from the edge of the roads.

Outdoor measurements should be made at 1.2 to 1.5 m above the ground and, if practical, at least 3.5 m from walls, buildings or other sound reflecting structures. When circumstances indicate, measurements may be made at greater heights and closer to the wall (for example 0.5 m in front of an open window), provided this is specified and taken into consideration.

Indoor measurements should be made at a distance of at least 1 m from the walls, 1.2 to 1.5 m above the floor, and about 1.5 m from the window(s). In order to reduce disturbances from standing waves, the sound levels measured indoors should be averaged over 0.5 m of each of at least 3 positions. This is especially important when measuring low-frequency noise. The arithmetic average of the readings determines the value to be taken.

The statistical analysis can be based on analogue or digital recordings of the sound level. For estimating purposes, it may in some cases be sufficient to determine the statistical distribution by observing the sound level meter readings at intervals of time by a sampling technique,

The class intervals for the sound level must be chosen according to the character of the noise; in most cases an interval of 5 dB will be appropriate.

## **2.4 WATER SAMPLING**

### **Collection and Preservation of Samples**

Collection and preservation of water and wastewater samples; the general principles also apply to the sampling of solids or semisolid matrices.

Ensure that all sampling equipment is clean and quality-assured before use. Use sample containers that are clean and free of contaminants. Bake at 450°C all bottles to be used for organic analysis sampling.

**Record of sample shall be as follows:**

#### **General information**

- Sample identification number
- Location
- Sample collector
- Date and hour
- Sample type (Grab or composite)



### **Collection of Samples**

#### **Ground Water:**

**Grab samples:** Grab samples are single collected at a specific spot at a site over a short period of time (typically seconds or minutes).

#### **Surface water:**

**Composite Sampling:** Composite samples vertically over the depth of a water body in one location or horizontally along a specific water depth.

#### **Sewage treatment plant water.**

**Integrated Sampling:** For certain purposes, the information needed is best provided by analyzing mixtures of grab samples collected from different points simultaneously.

### **2.5 Fugitive Emission Monitoring**

Fugitive air quality was monitored 36 samples were collected from the analyzed for SPM analyzed by gravimetric method. Work Zone Air quality was monitored at all Plant area, and material handling area.

### **2.6 Stack monitoring method**

Stack Monitoring was Monitored 32 Samples Collected from Vayubodhan Stack sampler VSS 1 stack monitoring kit was used for drawing the flue gas. Sulphur dioxide and oxides of nitrogen in the flue gas were sampled by bubbling flue gas in 3% H<sub>2</sub>O<sub>2</sub> and 0.1N NaOH solution respectively and the analysis of the pollutants were done as per the Indian standard procedures prescribed by CPCB/BIS. Stack emission level was monitored as per the statutory requirement on twice in a month.

#### **Stack Emissions Monitoring Methodology**

##### **Pre-Sampling Activities**

Weigh the properly conditioned thimble/filter and place it into the clean, air tight Container. Designate appropriate label or ID No. to each thimble/filter container. Particulate matter emission of "Stack Monitoring – Material and Methodology for is kinetic Sampling.

Field activity starts with the collection of detailed information from the industry about the products, raw materials, fuels, and stack dimensions.



### **Traverse Point Calculation**

Calculate the traverse point and accordingly mark the distance from tip of the Nozzle, on Pitot tube and probe. Do not forget to add the collar length of port to the calculated traverses. For detailed calculation of "Stack Monitoring- Material and Methodology for isokinetic sampling.

### **Determination of Dust Concentration**

Determine the mass of dust collected in the thimble by difference i.e., weighing the thimble before and after the run. Dry the thimble in an oven for about 2 hours at 120°C prior to sampling. After sampling, cool, dry and again weigh the thimble along with dust maintaining the same condition as prior to sampling.

## **2.7 DATA ANALYSIS**

### **2.7.1 BUFFERZONE AMBIENT AIR QUALITY STATUS**

#### **Danapur Village (A1)**

At this location, average of PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>2</sub> values Average 55.50, 20.32, 9.69 & 12.28 µg/m<sup>3</sup> respectively. All above the values were found within the Limits. And the results given in **Annexure-1**.

#### **Mariyammanahalli Village (A2)**

At this location, average of PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>2</sub> values Average 58.73, 21.03, 9.79 & 11.64 µg/m<sup>3</sup> respectively. All above the values were found within the Limits. And the results given in **Annexure-2**.

#### **Hanumanahalli Village (A3)**

At this location, average of PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>2</sub> values Average 54.14, 20.12, 10.14 & 11.85 µg/m<sup>3</sup> respectively. All above the values were found within the Limits. Results given in **Annexure-3**.

#### **Galemmanagudi Village (A4)**

At this location, average of PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>2</sub> values Average 55.36, 18.83, 10.85 & 12.55 µg/m<sup>3</sup> respectively. All above the values were found within the Limits. Results given in **Annexure-4**.

#### **Gunda Village (A5)**

At this location, average of PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>2</sub> values Average 51.06, 16.76, 8.84 & 10.44 µg/m<sup>3</sup> respectively. All above the values were found within the Limits. Results given in **Annexure-5**.

### **Gunda Tanda Village (A6)**

At this location, average of PM10, PM2.5, SO2, NO2 values Average 48.30, 15.78, 7.93 & 9.47  $\mu\text{g}/\text{m}^3$  respectively. All above the values were found within the Limits. Results given in **Annexure-6**.

### **2.8 FUGITIVE DUST CONCENTRATION**

Fortnightly fugitive air quality was monitored all plant area SPM value minimum 308.88  $\mu\text{g}/\text{m}^3$ , maximum value 1711.67  $\mu\text{g}/\text{m}^3$ , and average value 877.81  $\mu\text{g}/\text{m}^3$ . The Fugitive air quality 1<sup>st</sup> & 2<sup>nd</sup> Fortnight Results given in **Annexure-7 & Annexure-8**.

### **2.9 STACK MONITORING**

Stack emission level was monitored as per the statutory requirement on twice in month. Stack emission level was monitored all chimneys' PM values (mg/Nm<sup>3</sup>) 1<sup>st</sup> and 2<sup>nd</sup> Fort Night Minimum Value 37.20 mg/Nm<sup>3</sup>, Maximum Value 61.20 mg/Nm<sup>3</sup> & Average Value 44.53 mg/Nm<sup>3</sup>. The Stack Emission Results given in **Annexure-9 & Annexure-19**.

### **3.0 AMBIENT NOISE LEVEL MEASUREMENT**

Noise level was recorded at 30 locations each in Ambient and work zone area using Sound Level Meter (Equinox -EQ 107 Instrument / SL-4001) The Day & Night time noise level values were ranging between 47.7 to 71.5 dB (A) and 46.5 to 65.3 dB (A). The noise level status is given in **Annexure-20 & Annexure-21**.

**3.1** Water Sample Collected at 18 locations in side plant and surrounding nearest villages and nearest surface water Sample Collected every Month. The Water Analysis Test Report is given in **Annexure-22 & Annexure-32**.

### **3.2 CONCLUSION**

All the monitored Environmental parameters were found to be well within the statutory norms and the same are enclosed as follows.





NABL Certificate No.: TC-5323

## GLOBAL ENVIRONMENT & MINING SERVICES

(Consulting Engineers, Mine designers, Geologist & Surveyors)

3<sup>rd</sup> Main Road, Basaveswara Badavane,

HOSAPETE - 583201, Dist., Vijayanagara (Karnataka)

Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

ANNEXURE-01  
GEMS-LD/TF/11/01

### ANALYSIS REPORT OF AMBIENT AIR QUALITY DATA

Name of the Industry : BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.  
Customer Reference : WO/ADMIN/FY22/RO38  
Sample collected by : Global Environment & Mining Services  
Discipline : Chemical  
Group : Atmospheric Pollution  
Sample Type : Ambient Air Quality Monitoring  
Particulars of Sample Collected : Respirable Dust Sampler, FPS Sampler  
Month : November-2021  
Location : A1-Danapur Village  
Duration of Monitoring : 24 Hour  
Report Issued Date : 06.12.2021  
Report Number : ULR-TC532321000001095F

### RESULTS

Parameters			PM <sub>10</sub> [µg/m <sup>3</sup> ]		PM <sub>2.5</sub> [µg/m <sup>3</sup> ]		SO <sub>2</sub> [µg/m <sup>3</sup> ]		NO <sub>2</sub> [µg/m <sup>3</sup> ]	
Reference Method			IS:5182: 2006 (Part-23) (RF-2017)		USEPA 2001 Gravimetric Method		IS:5182: 2001 (Part-2) (RF-2017)		IS:5182: (Part-6) 2006 (RF-2017)	
Date of Sampling	Date of Received Sample	Sample Code	Result	STD	Result	STD	Result	STD	Result	STD
01.11.2021	02.11.2021	3615	49.42	100	18.48	60	10.07	80	13.98	80
02.11.2021	03.11.2021	3622	65.64		23.43		9.19		11.43	
08.11.2021	09.11.2021	3692	51.83		19.76		8.65		10.70	
09.11.2021	10.11.2021	3717	67.23		25.73		10.40		13.62	
15.11.2021	16.11.2021	3818	54.39		17.35		8.97		10.09	
16.11.2021	17.11.2021	3855	63.01		24.04		11.16		14.22	
23.11.2021	24.11.2021	4020	42.09		15.51		9.30		11.67	
24.11.2021	25.11.2021	4049	50.41		18.27		9.74		12.52	
Average			55.50		20.32		9.69		12.28	

**INFERENCE** As per NAAQMS Standards (2009),  
Report Status: - Measured Values for the above parameters are within the limit.

*Malli*  
Analysed By  
Mallikarjun S  
Chemist

*J.M.S*  
Verified By  
J. M. Thippeswamy  
Senior chemist



#### Note:

- The result listed refers only to the tested samples & applicable parameters. Endorsement of products is neither inferred nor implied.
- Water Samples will be destroyed after 15Days, Minerals 3 Months, Filter papers & Thimbles After analysis Discard.
- This report is not to be reproduced wholly or in part & cannot be used as evidence in the Court of law & should not use any advertising media without special permission in writing.
- Total liability of our laboratory is limited to the Invoice amount. Any dispute arising out of this report is subject to Hosapete jurisdiction only.
- The tests results marked with \* Recognised by MOEF & CC
- Recognised by Ministry of Environment, Forest and Climate Change for Laboratory
- Recognised by Government of Karnataka, Maharashtra, Goa for DGPS survey



**ANNEXURE-02**  
**GEMS-LD/TF/11/01**

**ANALYSIS REPORT OF AMBIENT AIR QUALITY DATA**

Name of the Industry : BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.  
Customer Reference : WO/ADMIN/FY22/R038  
Sample collected by : Global Environment & Mining Services  
Discipline : Chemical  
Group : Atmospheric Pollution  
Sample Type : Ambient Air Quality Monitoring  
Particulars of Sample Collected : Respirable Dust Sampler, FPS Sampler  
Month : **November-2021**  
Location : **A2 -Mariyammanahalli Village**  
Duration of Monitoring : 24 Hour  
Report Issued Date : **06.12.2021**  
Report Number : **ULR-TC532321000001096F**

**RESULTS**

Parameters			PM <sub>10</sub> [µg/m <sup>3</sup> ]		PM <sub>2.5</sub> [µg/m <sup>3</sup> ]		SO <sub>2</sub> [µg/m <sup>3</sup> ]		NO <sub>2</sub> [µg/m <sup>3</sup> ]	
Reference Method			IS:5182: 2006 (Part-23) (RF-2017)		USEPA 2001 Gravimetric Method		IS:5182: 2001 (Part-2) (RF-2017)		IS :5182: (Part-6) 2006 (RF-2017)	
Date of Sampling	Date of Received Sample	Sample Code	Result	STD	Result	STD	Result	STD	Result	STD
01.11.2021	02.11.2021	3616	51.85	100	16.01	60	8.10	80	10.21	80
02.11.2021	03.11.2021	3623	62.69		25.54		11.82		13.62	
08.11.2021	09.11.2021	3693	65.95		23.42		9.63		10.46	
09.11.2021	10.11.2021	3718	58.70		19.95		8.86		10.70	
15.11.2021	16.11.2021	3819	65.72		24.74		10.07		11.79	
16.11.2021	17.11.2021	3856	63.85		21.22		11.16		13.37	
23.11.2021	24.11.2021	4021	52.32		17.31		9.30		12.40	
24.11.2021	25.11.2021	4050	48.72		20.08		9.37		10.58	
Average			58.73		21.03		9.79		11.64	

**INFERENCE** As per NAAQMS Standards (2009),  
Report Status: - Measured Values for the above parameters are within the limit.

*Malli*  
**Analysed By**  
Mallikarjun S  
Chemist

*J.M.T*  
**Verified By**  
J. M. Thippeswamy  
Senior chemist



**Note:**

- The result listed refers only to the tested samples & applicable parameters. Endorsement of products is neither inferred nor implied.
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NABL Certificate No.: TC-5323

## GLOBAL ENVIRONMENT & MINING SERVICES

(Consulting Engineers, Mine designers, Geologist & Surveyors)

3rd Main Road, Basaveswara Badavane,

HOSAPETE - 583201, Dist., Vijayanagara (Karnataka)

Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

ANNEXURE-03  
GEMS-LD/TF/11/01

### ANALYSIS REPORT OF AMBIENT AIR QUALITY DATA

Name of the Industry : BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.  
Customer Reference : WO/ADMIN/FY22/RO38  
Sample collected by : Global Environment & Mining Services  
Discipline : Chemical  
Group : Atmospheric Pollution  
Sample Type : Ambient Air Quality Monitoring  
Particulars of Sample Collected : Respirable Dust Sampler, FPS Sampler  
Month : November-2021  
Location : A3 -Hanumanahalli Village  
Duration of Monitoring : 24 Hour  
Report Issued Date : 06.12.2021  
Report Number : ULR-TC532321000001097F

### RESULTS

Parameters			PM <sub>10</sub> [µg/m <sup>3</sup> ]		PM <sub>2.5</sub> [µg/m <sup>3</sup> ]		SO <sub>2</sub> [µg/m <sup>3</sup> ]		NO <sub>2</sub> [µg/m <sup>3</sup> ]	
Reference Method			IS:5182: 2006 (Part-23) (RF-2017)		USEPA 2001 Gravimetric Method		IS:5182: 2001 (Part-2) (RF-2017)		IS:5182: (Part-6) 2006 (RF-2017)	
Date of Sampling	Date of Received Sample	Sample Code	Result	STD	Result	STD	Result	STD	Result	STD
01.11.2021	02.11.2021	3617	54.27	100	17.96	60	12.59	80	13.25	80
02.11.2021	03.11.2021	3624	63.12		23.49		8.65		11.18	
08.11.2021	09.11.2021	3694	55.68		21.26		10.94		12.40	
09.11.2021	10.11.2021	3719	60.69		26.41		10.18		12.16	
15.11.2021	16.11.2021	3820	52.17		21.62		9.19		11.18	
16.11.2021	17.11.2021	3857	54.73		19.12		9.19		11.43	
23.11.2021	24.11.2021	4022	48.57		16.33		9.08		10.58	
24.11.2021	25.11.2021	4051	43.90		14.80		11.27		12.64	
Average			54.14		20.12		10.14		11.85	

**INFERENCE** As per NAAQMS Standards (2009),  
Report Status: - Measured Values for the above parameters are within the limit.

*Mallikarjun S*  
Analysed By  
Mallikarjun S  
Chemist

*J. M. Thippeswamy*  
Verified By  
J. M. Thippeswamy  
Senior chemist



**Note:**

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**ANNEXURE-04**  
**GEMS-LD/TF/11/01**

## **ANALYSIS REPORT OF AMBIENT AIR QUALITY DATA**

Name of the Industry : BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.  
Customer Reference : WO/ADMIN/FY22/R038  
Sample collected by : Global Environment & Mining Services  
Discipline : Chemical  
Group : Atmospheric Pollution  
Sample Type : Ambient Air Quality Monitoring  
Particulars of Sample Collected : Respirable Dust Sampler, FPS Sampler  
Month : **November-2021**  
Location : **A4-Galemmanagudi Village**  
Duration of Monitoring : 24 Hour  
Report Issue Date : **06.12.2021**  
Report Number : **ULR-TC532321000001107F**

### **RESULTS**

Parameters			PM <sub>10</sub> [µg/m <sup>3</sup> ]		PM <sub>2.5</sub> [µg/m <sup>3</sup> ]		SO <sub>2</sub> [µg/m <sup>3</sup> ]		NO <sub>2</sub> [µg/m <sup>3</sup> ]	
Reference Method			IS:5182: 2006 (Part-23) (RF-2017)		USEPA 2001 Gravimetric Method		IS:5182: 2001 (Part-2) (RF-2017)		IS :5182: (Part-6) 2006 (RF-2017)	
Date of Sampling	Date of Received Sample	Sample Code	Result	STD	Result	STD	Result	STD	Result	STD
03.11.2021	04.11.2021	3643	61.02	100	20.65	60	11.60	80	14.22	80
04.11.2021	05.11.2021	3660	56.98		16.78		13.35		14.83	
10.11.2021	11.11.2021	3763	63.85		25.81		12.26		13.01	
11.11.2021	12.11.2021	3772	67.14		22.34		9.52		11.91	
17.11.2021	18.11.2021	3873	50.23		14.94		9.41		11.67	
18.11.2021	19.11.2021	3910	53.86		20.85		10.42		12.16	
25.11.2021	26.11.2021	4068	47.97		13.80		8.76		10.09	
26.11.2021	27.11.2021	4085	41.81		15.43		11.49		12.52	
Average			55.36		18.83		10.85		12.55	

**INFERENCE** As per NAAQMS Standards (2009),  
Report Status: - Measured Values for the above parameters are within the limit.

*Mallikarjun S*  
**Analysed By**  
Mallikarjun S  
Chemist

*J. M. T*  
**Verified By**  
J. M. Thippeswamy  
Senior chemist

**Note:**

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NABL Certificate No.: TC-5323

## GLOBAL ENVIRONMENT & MINING SERVICES

(Consulting Engineers, Mine designers, Geologist & Surveyors)

3rd Main Road, Basaveswara Badavane,

HOSAPETE - 583201, Dist., Vijayanagara (Karnataka)

Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

ANNEXURE-05  
GEMS-LD/TF/11/01

### ANALYSIS REPORT OF AMBIENT AIR QUALITY DATA

Name of the Industry : BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.  
Customer Reference : WO/ADMIN/FY22/R038  
Sample collected by : Global Environment & Mining Services  
Discipline : Chemical  
Group : Atmospheric Pollution  
Sample Type : Ambient Air Quality Monitoring  
Particulars of Sample Collected : Respirable Dust Sampler, FPS Sampler  
Month : November-2021  
Location : A5-Gunda Village  
Duration of Monitoring : 24 Hour  
Report Issue Date : 06.12.2021  
Report Number : ULR-TC532321000001108F

### RESULTS

Parameters			PM10 [µg/m <sup>3</sup> ]		PM2.5 [µg/m <sup>3</sup> ]		SO2 [µg/m <sup>3</sup> ]		NO2 [µg/m <sup>3</sup> ]	
Reference Method			IS:5182: 2006 (Part-23) (RF-2017)		USEPA 2001 Gravimetric Method		IS:5182: 2001 (Part-2) (RF-2017)		IS:5182: (Part-6) 2006 (RF-2017)	
Date of Sampling	Date of Received Sample	Sample Code	Result	STD	Result	STD	Result	STD	Result	STD
03.11.2021	04.11.2021	3644	47.73	100	18.48	60	8.10	80	9.85	80
04.11.2021	05.11.2021	3661	51.95		15.36		9.85		11.31	
10.11.2021	11.11.2021	3764	55.26		19.24		9.74		10.21	
11.11.2021	12.11.2021	3773	50.83		14.84		9.19		10.09	
17.11.2021	18.11.2021	3874	56.74		16.43		8.43		11.91	
18.11.2021	19.11.2021	3911	59.71		21.04		9.32		10.21	
25.11.2021	26.11.2021	4069	47.08		15.71		7.22		9.36	
26.11.2021	27.11.2021	4086	39.19		12.96		8.86		10.58	
Average			51.06		16.76		8.84		10.44	

**INFERENCE** As per NAAQMS Standards (2009),  
Report Status: - Measured Values for the above parameters are within the limit.

*Malli*  
Analysed By  
Mallikarjun S  
Chemist

*J.M.T*  
Verified By  
J. M. Thippeswamy  
Senior chemist

#### Note:

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(Consulting Engineers, Mine designers, Geologist & Surveyors)

3<sup>rd</sup> Main Road, Basaveswara Badavane,

HOSAPETE – 583201, Dist., Vijayanagara (Karnataka)

Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

ANNEXURE-06  
GEMS-LD/TF/11/01

### ANALYSIS REPORT OF AMBIENT AIR QUALITY DATA

Name of the Industry : BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.  
Customer Reference : WO/ADMIN/FY22/RO38  
Sample collected by : Global Environment & Mining Services  
Discipline : Chemical  
Group : Atmospheric Pollution  
Sample Type : Ambient Air Quality Monitoring  
Particulars of Sample Collected : Respirable Dust Sampler, FPS Sampler  
Month : November-2021  
Location : A6-Gunda Tanda Village  
Duration of Monitoring : 24 Hour  
Report Issue Date : 06.12.2021  
Report Number : ULR-TC532321000001109F

#### RESULTS

Parameters			PM <sub>10</sub> [µg/m <sup>3</sup> ]		PM <sub>2.5</sub> [µg/m <sup>3</sup> ]		SO <sub>2</sub> [µg/m <sup>3</sup> ]		NO <sub>2</sub> [µg/m <sup>3</sup> ]	
Reference Method			IS:5182: 2006 (Part-23) (RF-2017)		USEPA 2001 Gravimetric Method		IS:5182: 2001 (Part-2) (RF-2017)		IS :5182: (Part-6) 2006 (RF-2017)	
Date of Sampling	Date of Received Sample	Sample Code	Result	STD	Result	STD	Result	STD	Result	STD
03.11.2021	04.11.2021	3645	48.53	100	13.40	60	7.77	80	8.15	80
04.11.2021	05.11.2021	3662	51.25		15.12		8.32		9.24	
10.11.2021	11.11.2021	3765	53.86		18.94		7.22		9.85	
11.11.2021	12.11.2021	3774	48.83		14.40		6.89		8.27	
17.11.2021	18.11.2021	3875	50.76		17.08		8.97		10.70	
18.11.2021	19.11.2021	3912	53.25		20.11		9.19		11.79	
25.11.2021	26.11.2021	4070	37.54		12.85		7.11		9.12	
26.11.2021	27.11.2021	4087	42.39		14.36		7.99		8.63	
Average			48.30		15.78		7.93		9.47	

**INFERENCE** As per NAAQMS Standards (2009),  
Report Status: - Measured Values for the above parameters are within the limit.

*Malli*  
Analysed By  
Mallikarjun S  
Chemist

*J.M.T*  
Verified By  
J. M. Thippeswamy  
Senior chemist

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(Consulting Engineers, Mine designers, Geologist & Surveyors)

3rd Main Road, Basaveswara Badavane,

HOSAPETE - 583201, Dist., Vijayanagara (Karnataka)

Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

ANNEXURE-07  
GEMS-LD/TF/11/01

### FORTNIGHTLY FUGITIVE AIR QUALITY MONITORING DATA

- 1 Name of the Industry : BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
- 2 Customer Reference : WO/ADMIN/FY22/R038
- 3 Sample collected by : GLOBAL Environment & Mining Services, Hosapete
- 4 Particulars of sample collected : RDS Sampler (GEMS-01, GEMS-02, GEMS-03, GEMS-04, GEMS-05)
- 5 Month : November-2021 (1<sup>st</sup> Fort Night)
- 6 Discipline : Chemical
- 7 Group : Atmospheric Pollution
- 8 Method adopted : IS 5182 (Part 4): 1999 RA 2014
- 9 Report Issued Date : 06.12.2021
- 10 Report Number : ULR-TC532321000001130F

Sl. NO.	Location / Plant	Sample Code	Date Of Monitoring	Date Of Sample Receipt	SPM ( $\mu\text{g}/\text{m}^3$ )	Standard
<b>I. Beneficiation Plant-1</b>						
1.	Main Canteen	3691	08.11.2021	09.11.2021	1459.23	2000
2.	Main Crusher	3712	09.11.2021	10.11.2021	964.61	2000
3.	Iron Ore Screen	3713	09.11.2021	10.11.2021	672.47	2000
<b>II. Pellet Plant-I</b>						
4.	Near Pellet Plant	3714	09.11.2021	10.11.2021	1121.53	2000
5.	TG Zero Meter	3715	09.11.2021	10.11.2021	1588.60	2000
6.	Pellet Stock Yard	3716	09.11.2021	10.11.2021	700.96	2000
<b>III. Sponge Iron Division-1</b>						
7.	Control Room SID-I	3758	10.11.2021	11.11.2021	585.16	2000
8.	Near Product bin	3759	10.11.2021	11.11.2021	617.33	2000
9.	Coal Feeding Area	3760	10.11.2021	11.11.2021	322.20	2000
<b>IV. Induction Furnace &amp; Rolling Mill</b>						
10.	IF Office	3761	10.11.2021	11.11.2021	1363.82	2000
11.	TMT Stock Yard	3762	10.11.2021	11.11.2021	456.21	2000
12.	RML Office	3767	11.11.2021	12.11.2021	946.73	2000
<b>V. Power Plant 25 MW</b>						
13.	25 MW ESP	3768	11.11.2021	12.11.2021	959.33	2000
14.	25 MW ACC	3769	11.11.2021	12.11.2021	1365.79	2000
<b>VI. Site Services</b>						
15.	Main Stores	3770	11.11.2021	12.11.2021	641.96	2000
16.	Old Admin Building	3771	11.11.2021	12.11.2021	741.44	2000
17.	Labour Gate	3783	12.11.2021	13.11.2021	685.12	2000
18.	Safety Office	3784	12.11.2021	13.11.2021	1244.23	2000

Note: SPM- Suspended Particulate matter. ( $\mu\text{g}/\text{m}^3$ ), INFERENCE: The Measured Values are within the limits

*Mallikarjun S*  
Analysed By  
Mallikarjun S  
Chemist

*J.M.S*  
Verified By  
J. M. Thippeswamy  
Senior chemist

#### Note:

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NABL Certificate No.: TC-5323

## GLOBAL ENVIRONMENT & MINING SERVICES

(Consulting Engineers, Mine designers, Geologist & Surveyors)

3<sup>rd</sup> Main Road, Basaveswara Badavane,

HOSAPETE – 583201, Dist., Vijayanagara (Karnataka)

Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

ANNEXURE-08  
GEMS-LD/TF/11/01

### FORTNIGHTLY FUGITIVE AIR QUALITY MONITORING DATA

- 1 Name of the Industry : BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
- 2 Customer Reference : WO/ADMIN/FY22/R038
- 3 Sample collected by : GLOBAL Environment & Mining Services, Hosapete
- 4 Particulars of sample collected : RDS Sampler (GEMS-01, GEMS-02, GEMS-03, GEMS-04, GEMS-05)
- 5 Month : November-2021(2<sup>nd</sup> Fort Night)
- 6 Discipline : Chemical
- 7 Group : Atmospheric Pollution
- 8 Method adopted : IS 5182 (Part 4): 1999 RA 2014
- 9 Report Issued Date : 06.12.2021
- 10 Report Number : ULR-TC532321000001268F

Sl. NO.	Location / Plant	Sample Code	Date Of Monitoring	Date Of Sample Receipt	SPM ( $\mu\text{g}/\text{m}^3$ )	Standard
<b>I. Beneficiation Plant-1</b>						
1.	Main Canteen	4044	24.11.2021	25.11.2021	798.63	2000
2.	Main Crusher	4018	23.11.2021	24.11.2021	1214.75	2000
3.	Iron Ore Screen	4019	23.11.2021	24.11.2021	805.98	2000
<b>II. Pellet Plant-I</b>						
4.	Near Pellet Plant	4045	24.11.2021	25.11.2021	852.04	2000
5.	TG Zero Meter	4046	24.11.2021	25.11.2021	770.93	2000
6.	Pellet Stock Yard	4047	24.11.2021	25.11.2021	925.82	2000
<b>III. Sponge Iron Division-1</b>						
7.	Control Room SID-I	4080	26.11.2021	27.11.2021	1425.09	2000
8.	Near Product bin	4081	26.11.2021	27.11.2021	670.31	2000
9.	Coal Feeding Area	4082	26.11.2021	27.11.2021	1711.67	2000
<b>IV. Induction Furnace &amp; Rolling Mill</b>						
10.	IF Office	4048	24.11.2021	25.11.2021	955.98	2000
11.	TMT Stock Yard	4063	25.11.2021	26.11.2021	419.29	2000
12.	RML Office	4064	25.11.2021	26.11.2021	850.35	2000
<b>V. Power Plant 25 MW</b>						
13.	25 MW ESP	4065	25.11.2021	26.11.2021	308.88	2000
14.	25 MW ACC	4066	25.11.2021	26.11.2021	625.04	2000
<b>VI. Site Services</b>						
15.	Main Stores	4083	26.11.2021	27.11.2021	626.48	2000
16.	Old Admin Building	4091	27.11.2021	28.11.2021	946.32	2000
17.	Labour Gate	4084	26.11.2021	27.11.2021	327.49	2000
18.	Safety Office (OHC)	4067	25.11.2021	26.11.2021	929.22	2000

Note: SPM - Suspended Particulate matter ( $\mu\text{g}/\text{m}^3$ ), INFERENCE: The Measured Values are within the limits.

*Malli*  
Analysed By  
Mallikarjun S  
Chemist

*J. M. Thippeswamy*  
Verified By  
J. M. Thippeswamy  
Senior chemist

#### Note:

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NABL Certificate No.: TC-5323

## GLOBAL ENVIRONMENT & MINING SERVICES

(Consulting Engineers, Mine designers, Geologist & Surveyors)

3<sup>rd</sup> Main Road, Basaveswara Badavane,

HOSAPETE - 583201, Dist., Vijayanagara (Karnataka)

Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

ANNEXURE-09  
GEMS-LD/TF/10/01

### Analysis Report of Stack Emission

1	Name of the Industry	:	BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	:	WO/ADMIN/FY22/RO38
3	Sample collected by	:	GLOBAL Environment & Mining Services, Hosapete
4	Particulars of sample collected	:	Vayubodhan Stack sampler VSS 1 Sl.No.304 DTB 07
5	Discipline	:	Chemical
6	Group	:	Atmospheric Pollution
7	Sample Type	:	Stack Monitoring
8	Sampling Location	:	Pellet Plant-1 ESP
9	Month of Sampling	:	November-2021
10	Date of Sample Received	:	12.11.2021 & 29.11.2021
11	Date of Sample Analysis	:	13.11.2021 & 30.11.2021
12	Date Sample Analysis Completion	:	14.11.2021 & 01.12.2021
13	Report Issued Date	:	06.12.2021
14	Report Number	:	ULR-TC532321000001159F

#### Stack Details

1	Fuel Used	Coal & furnace oil
2	Stack Height (mtr)	100.0
3	Stack Diameter (mtr)	7.0

#### Emission Details

Sl. No.	Parameters	Method	Unit	Result		Permissible Limit
				1 <sup>st</sup> Fort Night	2 <sup>nd</sup> Fort Night	
				12.11.2021	29.11.2021	
	Date of Monitoring					
	Sample Code			3785	4103	
1	Ambient Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C	38	28	-
2	Stack Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C	105	117	-
3	Velocity of Fuel Gas	IS: 11255 (Part 1) - 1985 (RA 2014)	m/sec	9.13	7.80	-
4	Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)	m <sup>3</sup> /hr	1265073	1080785	-
5	Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)	Nm <sup>3</sup> /hr	1040840	834144	-
6	Particulate Matter	IS: 11255 (Part 1) - 1985 (RA 2014)	mg/Nm <sup>3</sup>	53.30	61.20	150
7	Sulphur Dioxide	IS: 11255 (Part 2): (RA 2014)	mg/Nm <sup>3</sup>	68.64	82.94	100
8	Nitrogen Dioxide	IS:11255 (Part7): 2005 (RA 2017)	mg/Nm <sup>3</sup>	22.55	28.70	50
9	Carbon Monoxide	GEMS/SOP/69	%	0.051	0.082	-

Note: NS- Not Specified, RA: Reaffirmed, INFERENCE: The Measured Values are within the limits.

Verified By  
J. M. Thippeswamy  
Senior chemist



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HOSAPETE – 583201, Dist., Vijayanagara (Karnataka)

Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

ANNEXURE-10  
GEMS-LD/TF/10/01

### Analysis Report of Stack Emission

1	Name of the Industry	: BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	: WO/ADMIN/FY22/R038
3	Sample collected by	: GLOBAL Environment & Mining Services, Hosapete
4	Particulars of sample collected	: Vayubodhan Stack sampler VSS 1 Sl.No.304 DTB 07
5	Discipline	: Chemical
6	Group	: Atmospheric Pollution
7	Sample Type	: Stack Monitoring
8	Sampling Location	: 2X100 TPD Sponge iron plant ESP
9	Month of Sampling	: November-2021
10	Date of Sample Received	: 27.11.2021
11	Date of Sample Analysis	: 28.11.2021
12	Date Sample Analysis Completion	: 29.11.2021
13	Report Issued Date	: 06.12.2021
14	Report Number	: ULR-TC532321000001276F

#### Stack Details

1	Fuel Used	Coal
2	Stack Height (mtr)	60.0
3	Stack Diameter (mtr)	2.00

#### Emission Details

Sl. No.	Parameters	Method	Unit	Result		Permissible Limit
				1 <sup>st</sup> Fort Night	2 <sup>nd</sup> Fort Night	
				08.11.2021	27.11.2021	
	Date of Monitoring					
	Sample Code			3695	4092	
1	Ambient Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C	28	31	-
2	Stack Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C	153	165	-
3	Velocity of Fuel Gas	IS: 11255 (Part 1) - 1985 (RA 2014)	m/sec	8.64	8.90	-
4	Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)	m <sup>3</sup> /hr	97729	100670	-
5	Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)	Nm <sup>3</sup> /hr	69052	69871	-
6	Particulate Matter	IS: 11255 (Part 1) - 1985 (RA 2014)	mg/Nm <sup>3</sup>	39.40	48.70	150
7	Sulphur Dioxide	IS: 11255 (Part 2): (RA 2014)	mg/Nm <sup>3</sup>	82.94	91.52	100
8	Nitrogen Dioxide	IS:11255 (Part7): 2005 (RA 2017)	mg/Nm <sup>3</sup>	24.60	38.95	50
9	Carbon Monoxide	GEMS/SOP/69	%	0.025	0.029	-

Note: NS- Not Specified. RA: Reaffirmed, INFERENCE: The Measured Values are within the limits.

*Mali*  
Analysed By  
Mallikarjun S  
Chemist

*J.M.T*  
Verified By  
J. M. Thippeswamy  
Senior chemist

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Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

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BMM STAGE-I

ANNEXURE-11  
GEMS-LD/TF/10/01

### Analysis Report of Stack Emission

1	Name of the Industry	: BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District
2	Customer Reference	: WO/ADMIN/FY22/RO38
3	Sample collected by	: GLOBAL Environment & Mining Services, Hosapete
4	Particulars of sample collected	: Vayubodhan Stack sampler VSS1 Sl.No.304 DTB 07
5	Discipline	: Chemical
6	Group	: Atmospheric Pollution
7	Sample Type	: Stack Monitoring
8	Sampling Location	: Induction Furnace1& 2
9	Month of Sampling	: November-2021
10	Date of Sample Received	: -
11	Date of Sample Analysis	: -
12	Date Sample Analysis Completion	: -
13	Report Issued Date	: 06.12.2021
14	Report Number	: -


#### Stack Details

1	Fuel Used	Electric Power
2	Stack Height (mtr)	30.0
3	Stack Diameter (mtr)	1.0

#### Emission Details

Sl. No.	Parameters	Method	Unit	Result		Permissible Limit
				1st Fort Night	2nd Fort Night	
				-	-	
1	Ambient Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C	Under Maintenance		-
2	Stack Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C			-
3	Velocity of Fuel Gas	IS: 11255 (Part 1) - 1985 (RA 2014)	m/sec			-
4	Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)	m <sup>3</sup> /hr			-
5	Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)	Nm <sup>3</sup> /hr			-
6	Particulate Matter	IS: 11255 (Part 1) - 1985 (RA 2014)	mg/Nm <sup>3</sup>			100
7	Sulphur Dioxide	IS: 11255 (Part 2): (RA 2014)	mg/Nm <sup>3</sup>			NS
8	Nitrogen Dioxide	IS:11255 (Part7): 2005 (RA 2017)	mg/Nm <sup>3</sup>			NS
9	Carbon Monoxide	GEMS/SOP/69	%			-

Note: NS- Not Specified, RA: Reaffirmed, INFERENCE: The Measured Values are within the limits,

  
 Verified By  
 J. M. Thippeswamy  
 Senior chemist



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(Consulting Engineers, Mine designers, Geologist & Surveyors)

3<sup>rd</sup> Main Road, Basaveswara Badavane,

HOSAPETE - 583201, Dist., Vijayanagara (Karnataka)

Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

ANNEXURE-12  
GEMS-LD/TF/10/01

### Analysis Report of Stack Emission

1	Name of the Industry	: BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District
2	Customer Reference	: WO/ADMIN/FY22/RO38
3	Sample collected by	: GLOBAL Environment & Mining Services, Hosapete
4	Particulars of sample collected	: Vayubodhan Stack sampler VSS 1 Sl.No.304 DTB 07
5	Discipline	: Chemical
6	Group	: Atmospheric Pollution
7	Sample Type	: Stack Monitoring
8	Sampling Location	: Rolling mill reheating furnace
9	Month of Sampling	: November-2021
10	Date of Sample Received	: 26.11.2021
11	Date of Sample Analysis	: 27.11.2021
12	Date Sample Analysis Completion	: 28.11.2021
13	Report Issued Date	: 06.12.2021
14	Report Number	: ULR-TC532321000001274F

#### Stack Details

1	Fuel Used	Coal
2	Stack Height (mtr)	30.0
3	Stack Diameter (mtr)	0.8

#### Emission Details

Sl. No.	Parameters	Method	Unit	Result		Permissible Limit
				1 <sup>st</sup> Fort Night	2 <sup>nd</sup> Fort Night	
				13.11.2021	26.11.2021	
	Date of Monitoring					
	Sample Code			3812	4088	
1	Ambient Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C	30	31	-
2	Stack Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C	308	330	-
3	Velocity of Fuel Gas	IS: 11255 (Part 1) - 1985 (RA 2014)	m/sec	10.67	11.15	-
4	Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)	m <sup>3</sup> /hr	19310	20179	-
5	Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)	Nm <sup>3</sup> /hr	10071	10173	-
6	Particulate Matter	IS: 11255 (Part 1) - 1985 (RA 2014)	mg/Nm <sup>3</sup>	47.50	42.90	100
7	Sulphur Dioxide	IS: 11255 (Part 2): (RA 2014)	mg/Nm <sup>3</sup>	168.74	194.48	270
8	Nitrogen Dioxide	IS:11255 (Part7): 2005 (RA 2017)	mg/Nm <sup>3</sup>	36.90	43.05	50
9	Carbon Monoxide	GEMS/SOP/69	%	0.043	0.054	-

Note: NS- Not Specified. RA: Reaffirmed, INFERENCE: The Measured Values are within the limits.,

*Malli*  
Analysed By  
Mallikarjun S  
Chemist

*J.M.T*  
Verified By  
J. M. Thippeswamy  
Senior chemist



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(Consulting Engineers, Mine designers, Geologist & Surveyors)

3<sup>rd</sup> Main Road, Basaveswara Badavane,

**HOSAPETE - 583201**, Dist., Vijayanagara (Karnataka)

Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

**ANNEXURE-13**  
**GEMS-LD/TF/10/01**

### Analysis Report of Stack Emission

1	Name of the Industry	: BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District
2	Customer Reference	: WO/ADMIN/FY22/R038
3	Sample collected by	: GLOBAL Environment & Mining Services, Hosapete
4	Particulars of sample collected	: Vayubodhan Stack sampler <b>VSS 1Sl.No. 304 DTB 07</b>
5	Discipline	: Chemical
6	Group	: Atmospheric Pollution
7	Sample Type	: Stack Monitoring
8	Sampling Location	: <b>AFBC Boiler ESP (25 MW Power Plant)</b>
9	Month of Sampling	: <b>November-2021</b>
10	Date of Sample Received	: -
11	Date of Sample Analysis	: -
12	Date Sample Analysis Completion	: -
13	Report Issued Date	: <b>06.12.2021</b>
14	Report Number	: -

#### Stack Details

1	Fuel Used	Coal
2	Stack Height (mtr)	65.0
3	Stack Diameter (mtr)	2.5

#### Emission Details

Sl. No.	Parameters	Method	Unit	Result		Permissible Limit
				1 <sup>st</sup> Fort Night	2 <sup>nd</sup> Fort Night	
	Date of Monitoring Sample Code			-	-	
1	Ambient Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C	Shutdown		-
2	Stack Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C			-
3	Velocity of Fuel Gas	IS: 11255 (Part 1) - 1985 (RA 2014)	m/sec			-
4	Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)	m <sup>3</sup> /hr			-
5	Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)	Nm <sup>3</sup> /hr			-
6	Particulate Matter	IS: 11255 (Part 1) - 1985 (RA 2014)	mg/Nm <sup>3</sup>			<b>50</b>
7	Sulphur Dioxide	IS: 11255 (Part 2): (RA 2014)	mg/Nm <sup>3</sup>			<b>600</b>
8	Nitrogen Dioxide	IS:11255 (Part7): 2005 (RA 2017)	mg/Nm <sup>3</sup>			<b>300</b>
9	Carbon Monoxide	GEMS/SOP/69	%			-

**Note:** NS- Not Specified. RA: Reaffirmed,

*J.M.T.*  
**Verified By**  
**J. M. Thippeswamy**  
Senior chemist



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Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

NABL Certificate No.: TC-5323

ANNEXURE-14  
GEMS-LD/TF/10/01


## Analysis Report of Stack Emission

- 1 Name of the Industry : BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
- 2 Customer Reference : WO/ADMIN/FY22/RO38
- 3 Sample collected by : GLOBAL Environment & Mining Services, Hosapete
- 4 Particulars of sample collected : Vayubodhan Stack sampler VSS 1 SL.No.304 DTB 07
- 5 Discipline : Chemical
- 6 Group : Atmospheric Pollution
- 7 Sample Type : Stack Monitoring
- 8 Date of Analysis Completion : November-2021 (1<sup>st</sup> Fort Night)
- 9 Date of Sample Received : -
- 10 Date of Sample Analysis : -
- 11 Date Sample Analysis Completion : -
- 12 Report Issued Date : 06.12.2021
- 13 Report Number : -

Sl. No	Stack Attached to	Date of Monitoring	Sample Code	Fuel Used	Ta °C	TS °C	V m/Sec	Height (m)	Diameter (m)	PM mg/Nm <sup>3</sup>	KSPCB Std mg/Nm <sup>3</sup>
Chimneys attached to Bag Filter (De dusting Units)											
Beneficiation Plant											
1	Ore Crushing & Screening	-	-	---	-	-	-	30	1.20	-	50
2	Ore Fines Hopper Bottom	-	-	---	-	-	-	30	1.20	-	50
3	Main Crusher (RMHS)	-	-	---	-	-	-	30	1.20	-	50

Sl. No	Beneficiation Plant	Gas flow rate at Stack Condition m <sup>3</sup> /hr	Gas flow rate at NTP Nm <sup>3</sup> /hr	KSPCB Std
1	Ore Crushing & Screening	-	-	-
2	Ore Fines Hopper Bottom	-	-	-
3	Main Crusher (RMHS)	-	-	-

Parameter	Protocol
Particulate Matter (mg/Nm <sup>3</sup> )	IS: 11255 (Part 1) - 1985 (reaffirmed 2014)
Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)
Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)

  
 Verified By  
 J. M. Thippeswamy  
 Senior chemist



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BMM STAGE-I

**ANNEXURE-15**  
**GEMS-LD/TF/10/01**

### Analysis Report of Stack Emission

1	Name of the Industry	:	BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	:	WO/ADMIN/FY22/R038
3	Sample collected by	:	GLOBAL Environment & Mining Services, Hosapete
4	Particulars of sample collected	:	Vayubodhan Stack sampler <b>VSS 1 Sl.No.304 DTB 07</b>
5	Discipline	:	Chemical
6	Group	:	Atmospheric Pollution
7	Sample Type	:	Stack Monitoring
8	Date of Analysis Completion	:	<b>November-2021 (1<sup>st</sup> Fort Night)</b>
9	Date of Sample Received	:	-
10	Date of Sample Analysis	:	-
11	Date Sample Analysis Completion	:	-
12	Report Issued Date	:	<b>06.12.2021</b>
13	Report Number	:	-

Sl. No	Stack Attached to	Date of Monitoring	Sample Code	Fuel Used	Ta °C	TS °C	V m/Sec	Height (m)	Diameter (m)	PM mg/Nm <sup>3</sup>	KSPCB Std mg/Nm <sup>3</sup>
<b>Chimneys attached to Bag Filter (De dusting Units)</b>											
<b>Pellet Plant</b>											
4	Mixed Area	-	-	---	-	-	-	30	1.20	-	50
5	Pellet Discharge Point	-	-	---	-	-	-	30	1.20	-	50
6	Product Transfer Point	-	-	---	-	-	-	30	1.20	-	50

Sl. No	Pellet Plant	Gas flow rate at Stack Condition m <sup>3</sup> /hr	Gas flow rate at NTP Nm <sup>3</sup> /hr	KSPCB Std
4	Mixed Area	-	-	-
5	Pellet Discharge Point	-	-	-
6	Product Transfer Point	-	-	-

Parameter	Protocol
Particulate Matter (mg/Nm <sup>3</sup> )	IS: 11255 (Part 1) - 1985 (reaffirmed 2014)
Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)
Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)

*J.M.T.*  
**Verified By**  
**J. M. Thippeswamy**  
Senior chemist

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(Consulting Engineers, Mine designers, Geologist & Surveyors)

3<sup>rd</sup> Main Road, Basaveswara Badavane,

HOSAPETE - 583201, Dist., Vijayanagara (Karnataka)

Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

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BMM STAGE-I

ANNEXURE-16  
GEMS-LD/TF/10/01

### Analysis Report of Stack Emission

- 1 Name of the Industry : BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
- 2 Customer Reference : WO/ADMIN/FY22/R038
- 3 Sample collected by : GLOBAL Environment & Mining Services, Hosapete
- 4 Particulars of sample collected : Vayubodhan Stack sampler VSS 1 SL.No.304 DTB 07
- 5 Discipline : Chemical
- 6 Group : Atmospheric Pollution
- 7 Sample Type : Stack Monitoring
- 8 Date of Analysis Completion : November-2021 (1<sup>st</sup> Fort Night)
- 9 Date of Sample Received : 10.11.2021 & 13.11.2021
- 10 Date of Sample Analysis : 11.11.2021 & 14.11.2021
- 11 Date Sample Analysis Completion : 12.11.2021 & 15.11.2021
- 12 Report Issued Date : 06.12.2021
- 13 Report Number : ULR-TC532321000001131F

Sl. No	Stack Attached to	Date of Monitoring	Sample Code	Fuel Used	Ta °C	TS °C	V m/Sec	Height (m)	Diameter (m)	PM mg/Nm <sup>3</sup>	KSPCB Std mg/Nm <sup>3</sup>
Chimneys attached to Bag Filter (De dusting Units)											
2 X 100 TPD Sponge Iron Kiln 1 & 2											
7	Cooler Discharge -1	12.11.2021	3787	---	30	36	7.10	30	1.20	42.60	50
8	Cooler Discharge -2	12.11.2021	3788	---	30	38	7.38	30	1.20	39.20	50
9	Coal Crusher	-	-	---	-	-	-	30	1.20	-	50
10	Transfer House	-	-	---	-	-	-	30	1.20	-	50
11	Intermediate Bin	13.11.2021	3813	---	33	40	6.43	30	1.20	41.50	50

Sl. No	2 X 100 TPD Sponge Iron Kiln 1 & 2	Gas flow rate at Stack Condition m <sup>3</sup> /hr	Gas flow rate at NTP Nm <sup>3</sup> /hr	KSPCB Std
7	Cooler Discharge -1	28911	28350	-
8	Cooler Discharge -2	30052	29279	-
9	Coal Crusher	-	-	-
10	Transfer House	-	-	-
11	Intermediate Bin	26183	25598	-

Parameter	Protocol
Particulate Matter (mg/Nm <sup>3</sup> )	IS: 11255 (Part 1) - 1985 (reaffirmed 2014)
Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)
Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)

Verified By  
J. M. Thippeswamy  
Senior chemist



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NABL Certificate No.: TC-5323

## GLOBAL ENVIRONMENT & MINING SERVICES

(Consulting Engineers, Mine designers, Geologist & Surveyors)

3<sup>rd</sup> Main Road, Basaveswara Badavane,

HOSAPETE - 583201, Dist., Vijayanagara (Karnataka)

Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

ANNEXURE-17  
GEMS-LD/TF/10/01

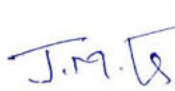
### Analysis Report of Stack Emission

1	Name of the Industry	:	BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	:	WO/ADMIN/FY22/R038
3	Sample collected by	:	GLOBAL Environment & Mining Services, Hosapete
4	Particulars of sample collected	:	Vayubodhan Stack sampler VSS 1 Sl.No.304 DTB 07
5	Discipline	:	Chemical
6	Group	:	Atmospheric Pollution
7	Sample Type	:	Stack Monitoring
8	Date of Analysis Completion	:	November-2021 (2 <sup>ND</sup> Fort Night)
9	Date of Sample Received	:	-
10	Date of Sample Analysis	:	-
11	Date Sample Analysis Completion	:	-
12	Report Issued Date	:	06.12.2021
13	Report Number	:	-

Sl. No	Stack Attached to	Date of Monitoring	Sample Code	Fuel Used	Ta °C	TS °C	V m/Sec	Height (m)	Diameter (m)	PM mg/Nm <sup>3</sup>	KSPCB Std mg/Nm <sup>3</sup>
Chimneys attached to Bag Filter (De dusting Units)											
Beneficiation Plant											
1	Ore Crushing & Screening	-	-	---	-	-	-	30	1.20	-	50
2	Ore Fines Hopper Bottom	-	-	---	-	-	-	30	1.20	-	50
3	Main Crusher (RMHS)	-	-	---	-	-	-	30	1.20	-	50

Sl. No	Beneficiation Plant	Gas flow rate at Stack Condition m <sup>3</sup> /hr	Gas flow rate at NTP Nm <sup>3</sup> /hr	KSPCB Std
1	Ore Crushing & Screening	-	-	-
2	Ore Fines Hopper Bottom	-	-	-
3	Main Crusher (RMHS)	-	-	-

Parameter	Protocol
Particulate Matter (mg/Nm <sup>3</sup> )	IS: 11255 (Part 1) - 1985 (reaffirmed 2014)
Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)
Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)

  
 Verified By  
 J. M. Thippeswamy  
 Senior chemist



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Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

ANNEXURE-18  
GEMS-LD/TF/10/01


### Analysis Report of Stack Emission

1	Name of the Industry	:	BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	:	WO/ADMIN/FY22/R038
3	Sample collected by	:	GLOBAL Environment & Mining Services, Hosapete
4	Particulars of sample collected	:	Vayubodhan Stack sampler VSS 1 SL.No.304 DTB 07
5	Discipline	:	Chemical
6	Group	:	Atmospheric Pollution
7	Sample Type	:	Stack Monitoring
8	Date of Analysis Completion	:	November-2021 (2 <sup>ND</sup> Fort Night)
9	Date of Sample Received	:	-
10	Date of Sample Analysis	:	-
11	Date Sample Analysis Completion	:	-
12	Report Issued Date	:	06.12.2021
13	Report Number	:	-

Sl. No	Stack Attached to	Date of Monitoring	Sample Code	Fuel Used	Ta °C	TS °C	V m/Sec	Height (m)	Diameter (m)	PM mg/Nm <sup>3</sup>	KSPCB Std mg/Nm <sup>3</sup>
Chimneys attached to Bag Filter (De dusting Units)											
Pellet Plant											
4	Mixed Area	-	-	---	-	-	-	30	1.20	-	50
5	Pellet Discharge Point	-	-	---	-	-	-	30	1.20	-	50
6	Product Transfer Point	-	-	---	-	-	-	30	1.20	-	50

Sl. No	Pellet Plant	Gas flow rate at Stack Condition m <sup>3</sup> /hr	Gas flow rate at NTP Nm <sup>3</sup> /hr	KSPCB Std
4	Mixed Area	-	-	-
5	Pellet Discharge Point	-	-	-
6	Product Transfer Point	-	-	-

Parameter	Protocol
Particulate Matter (mg/Nm <sup>3</sup> )	IS: 11255 (Part 1) - 1985 (reaffirmed 2014)
Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)
Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)

  
 Verified By  
 J. M. Thippeswamy  
 Senior chemist



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HOSAPETE - 583201, Dist., Vijayanagara (Karnataka)

Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

ANNEXURE-19  
GEMS-LD/TF/10/01

### Analysis Report of Stack Emission

- 1 Name of the Industry : BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
- 2 Customer Reference : WO/ADMIN/FY22/R038
- 3 Sample collected by : GLOBAL Environment & Mining Services, Hosapete
- 4 Particulars of sample collected : Vayubodhan Stack sampler VSS 1 Sl.No.304 DTB 07
- 5 Discipline : Chemical
- 6 Group : Atmospheric Pollution
- 7 Sample Type : Stack Monitoring
- 8 Date of Analysis Completion : November-2021 (2<sup>ND</sup> Fort Night)
- 9 Date of Sample Received : 30.11.2021
- 10 Date of Sample Analysis : 01.12.2021
- 11 Date Sample Analysis Completion : 02.12.2021
- 12 Report Issued Date : 06.12.2021
- 13 Report Number : ULR-TC532321000001279F

Sl. No	Stack Attached to	Date of Monitoring	Sample Code	Fuel Used	Ta °C	TS °C	V m/Sec	Height (m)	Diameter (m)	PM mg/Nm <sup>3</sup>	KSPCB Std mg/Nm <sup>3</sup>
Chimneys attached to Bag Filter (De dusting Units)											
2 X 100 TPD Sponge Iron Kiln 1 & 2											
7	Cooler Discharge -1	30.11.2021	4116	---	28	37	7.48	30	1.20	37.20	50
8	Cooler Discharge -2	30.11.2021	4117	---	28	35	7.56	30	1.20	42.60	50
9	Coal Crusher	-	-	---	-	-	-	30	1.20	-	50
10	Transfer House	-	-	---	-	-	-	30	1.20	-	50
11	Intermediate Bin	30.11.2021	4118	---	32	36	6.69	30	1.20	38.30	50

Sl. No	2 X 100 TPD Sponge Iron Kiln 1 & 2	Gas flow rate at Stack Condition m <sup>3</sup> /hr	Gas flow rate at NTP Nm <sup>3</sup> /hr	KSPCB Std
7	Cooler Discharge -1	30459	29575	-
8	Cooler Discharge -2	30785	30085	-
9	Coal Crusher	-	-	-
10	Transfer House	-	-	-
11	Intermediate Bin	27242	26889	-

Parameter	Protocol
Particulate Matter (mg/Nm <sup>3</sup> )	IS: 11255 (Part 1) - 1985 (reaffirmed 2014)
Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)
Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)

*Mallikarjun S*  
Analysed By  
Mallikarjun S  
Chemist

*J. M. Thippeswamy*  
Verified By  
J. M. Thippeswamy  
Senior chemist



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3<sup>rd</sup> Main Road, Basaveswara Badavane,

**HOSAPETE - 583201**, Dist., Vijayanagara (Karnataka)

Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

**ANNEXURE-20**  
**GEMS-LD/TF/08/01**

### AMBIENT NOISE LEVEL MONITORING REPORT

Name of the Industry : BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.  
Customer Reference : WO/ADMIN/FY22/R038  
Sample collected by : Global Environment & Mining Services  
Discipline : Chemical  
Group : Atmospheric Pollution  
Sample Type : Noise Level Monitoring  
Particulars of Sample Collected : Equinox-107  
Month : **November-2021**  
Report Issue Date : **06.12.2021**  
Method Adopted : IS 9989-1981 Reaffirmed 2014  
Report No : **ULR-TC532321000001160F**

Sl. No	Location	Date of Monitoring	Noise Level dB (A)					
			Day Time		Standard	Night Time		Standard
			Min	Max		Min	Max	
1	Main Gate	01.11.2021	53.2	65.9	75	50.8	62.9	70
2	Near ATM	02.11.2021	54.7	67.3	75	52.5	64.5	70
3	Transit House	03.11.2021	52.2	63.4	75	50.7	56.3	70
4	CAAQMS Station	04.11.2021	50.8	64.2	75	46.5	63.7	70
5	Gunda Road	08.11.2021	53.1	60.7	75	48.3	57.5	70
6	Gunda Railway Station	09.11.2021	54.4	64.5	75	52.4	62.3	70
7	Bagging Shed	10.11.2021	57.9	66.2	75	47.5	59.6	70
8	Railway Siding	11.11.2021	58.3	65.3	75	54.7	62.3	70
9	4th Gate	12.11.2021	55.4	69.8	75	51.9	59.4	70
10	Bricks Plant	13.11.2021	57.7	65.4	75	53.5	61.7	70
11	Kempuhalla (Wagon Tippler)	15.11.2021	56.5	71.2	75	47.7	65.3	70
12	Danapura Bridge	16.11.2021	60.2	67.3	75	55.2	59.1	70
13	2nd Gate	17.11.2021	63.1	69.5	75	54.4	62.7	70
14	Project Store	18.11.2021	55.6	63.3	75	52.6	60.8	70
15	Dispatch (Truck Parking Area)	23.11.2021	61.8	70.1	75	57.3	63.4	70

#### INFERENCE

As per CPCB Standards,

**Report Status: - Measured Values for the above parameters are within the limit.**

*J.M. S*

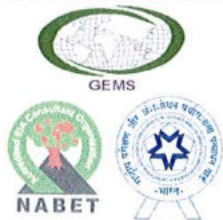
Verified By

J. M. Thippeswamy  
Senior chemist



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3rd Main Road, Basaveswara Badavane,

HOSAPETE - 583201, Dist., Vijayanagara (Karnataka)

Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

ANNEXURE-21  
GEMS-LD/TF/08/01

### AMBIENT NOISE LEVEL MONITORING REPORT

Name of the Industry : BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.  
Customer Reference : WO/ADMIN/FY22/R038  
Sample collected by : Global Environment & Mining Services  
Discipline : Chemical  
Group : Atmospheric Pollution  
Sample Type : Noise Level Monitoring  
Particulars of Sample Collected : Equinox-107  
Month : November-2021  
Report Issue Date : 06.12.2021  
Method Adopted : IS 9989-1981 Reaffirmed 2014  
Report No : ULR-TC532321000001270F

Sl. No	Location	Date of Monitoring	Noise Level dB (A)					
			Day Time		Standard	Night Time		Standard
			Min	Max		Min	Max	
1	Main Gate	08.11.2021	52.7	66.4	75	49.8	63.7	70
2	Near ATM	09.11.2021	51.5	68.3	75	48.3	64.9	70
3	Transit House	10.11.2021	53.1	63.7	75	49.4	57.4	70
4	CAAQMS Station	11.11.2021	51.4	67.4	75	48.6	61.8	70
5	Gunda Road	12.11.2021	47.7	58.8	75	46.7	54.5	70
6	Gunda Railway Station	13.11.2021	53.8	65.2	75	50.5	60.7	70
7	Bagging Shed	15.11.2021	54.2	67.7	75	48.3	58.2	70
8	Railway Siding	16.11.2021	56.3	68.4	75	53.5	61.4	70
9	4th Gate	17.11.2021	57.9	70.8	75	49.8	63.6	70
10	Bricks Plant	18.11.2021	53.4	68.7	75	52.5	65.1	70
11	Kempuhalla (Wagon Tippler)	23.11.2021	56.8	69.5	75	51.3	60.7	70
12	Danapura Bridge	24.11.2021	58.7	66.1	75	54.1	61.9	70
13	2nd Gate	25.11.2021	60.3	71.5	75	52.9	64.5	70
14	Project Store	26.11.2021	52.4	62.9	75	48.5	57.4	70
15	Dispatch (Truck Parking Area)	27.11.2021	55.6	66.3	75	53.4	59.8	70

#### INFERENCE

As per CPCB Standards,

Report Status: - Measured Values for the above parameters are within the limit.

J.M.T

Verified By  
J. M. Thippeswamy  
Senior chemist



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e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

ANNEXURE-22  
GEMS-LD/TF/23/01

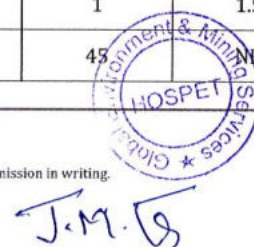
### Analysis Report of Water Quality Data

- 1 Name of the Industry : BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
- 2 Customer Reference : WO/ADMIN/FY22/R038
- 3 Sample collected by : GLOBAL Environment & Mining Services
- 4 Particulars of sample collected : Grab Sampling
- 5 Sampling Procedure : GEMS-LD/SOP/32
- 6 Discipline : Chemical
- 7 Group : Pollution & Environment
- 8 Sample Type : Ground Water
- 9 Sample Code : 3794
- 10 Date of Sampling : 13.11.2021
- 11 Sample Received : 13.11.2021
- 12 Date of Analysis : 13.11.2021
- 13 Date of Analysis Completion : 20.11.2021
- 14 Report Issue Date : 06.12.2021
- 15 Report Number : ULR-TC532321000001161F

Sl. No	Parameters	Protocol	Unit	Danapur Village (GW1)	Standards as per IS: 10500:2012	
					Desirable Limits	Permissible Limits
1.	Colour	IS: 3025 (PART 4)- 1984, RA-2002 Platinum cobalt Method	Hazen	<5	5	15
2.	Conductivity	APHA 23 <sup>rd</sup> Edition 2017 2510 B (Pg. No.2-54)	μS/cm	2200	-	-
3.	Total Dissolved Solids	APHA 23 <sup>rd</sup> Edition 2017 2540 C (Pg. No.2-65)	mg/L	1368	500	2000
4.	pH	APHA 23 <sup>rd</sup> Edition 2017 4500 B (Pg. No.4-92 to 4-96)	-	7.23	6.5 to 8.5	NR
5.	Turbidity (NTU)	APHA 23 <sup>rd</sup> Edition 2017 2130 B (Pg. No.2-14)	NTU	0.2	1	5
6.	Total Suspended Solids	APHA 23 <sup>rd</sup> Edition 2017 2540 D (Pg. No.2-66 to 2-67)	mg/L	Nil	-	-
7.	Sulphate as SO <sub>4</sub>	APHA 23 <sup>rd</sup> Edition 2012 4500 SO <sub>4</sub> <sup>2-</sup> E (Page No. 4-190)	mg/L	157	200	400
8.	phosphorous as P	APHA 23 <sup>rd</sup> EDITION -4500-P D (Pg. No. 4-163 to 4-164)	mg/L	Nil	-	-
9.	Sodium as Na	APHA 23 <sup>rd</sup> Edition 2017 Na 3500 B (Pg. No.3-97 to 3-98)	mg/L	185.75	-	-
10.	Potassium as K	APHA 23 <sup>rd</sup> Edition 2017 K 3500 B (Pg. No.3-87 to 3-88)	mg/L	44.70	-	-
11.	Calcium as Ca	APHA 23 <sup>rd</sup> Edition 2017 3500 Ca B (Pg. No.3-84)	mg/L	178	75	200
12.	Magnesium as Mg	APHA 23 <sup>rd</sup> Edition 2017 3500-B Mg By calculation	mg/L	20.17	30	100
13.	Total Hardness as CaCO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2017 2340 C (Page No. 2-46)	mg/L	528	200	600
14.	Chloride as Cl	APHA 23 <sup>rd</sup> Edition 2017 4500 Cl- (Page No. 4-72)	mg/L	318.62	250	1000
15.	Fluoride as F	APHA 23 <sup>rd</sup> Edition 2012 4500 F- D (Page No. 4-87 to 4-88)	mg/L	0.06	1	1.5
16.	Nitrate Nitrogen as NO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2012 4500 NO <sub>3</sub> E (Pg. No.4-125 to 4-127)	mg/L	14.80	45	NR

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Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

**BMM STAGE-I**

### ANNEXURE-22

17.	Total Alkalinity as CaCO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2320 B (Pg. No.2-35)	mg/L	500.10	200	600
18.	Acidity as CaCO <sub>3</sub>	IS:3025 (part 22)-1986, RA-2014 Indicator method	mg/L	Nil	-	-
19.	Total Iron as Fe	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.20	0.30	NR
20.	Nickel as Ni	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.01	0.02	NR
21.	Manganese as Mn	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.1	0.10	0.30
22.	Copper as Cu	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.05	0.05	1.50
23.	Zinc as Zn	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.1	5	15
24.	Lead as Pb	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.01	0.01	NR
25.	Total Coli form count	APHA 23 <sup>rd</sup> Edition 9222-B (p.no.9-66) Membrane filter technique	MPN/ 100 ml	Ab	Shall not be detectable in any 100 ml sample	-
26.	Escherichia coli count	APHA 23 <sup>rd</sup> Edition 9222 (p.no.9-76) Membrane filter technique	MPN/ 100 ml	Ab	Shall not be detectable in any 100ml sample	-

**Note: GW1: Danapur Village. NR-No relaxation. Ab-Absent.**

#### INFERENCE

**As per Standards IS: 10500:2012**

**Report Status: - Measured Values for the above parameters are within the limit.**

*Malli*  
**Analysed By**  
Mallikarjun S  
Chemist

*J.M.T*  
**Verified By**  
J. M. Thippeswamy  
Senior chemist



#### Note:

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NABL Certificate No.: TC-5323

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(Consulting Engineers, Mine designers, Geologist & Surveyors)

3rd Main Road, Basaveswara Badavane,

HOSAPETE - 583201, Dist., Vijayanagara (Karnataka)

Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

ANNEXURE-23  
GEMS-LD/TF/23/01

### Analysis Report of Water Quality Data

1	Name of the Industry	: BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	: WO/ADMIN/FY22/RO38
3	Sample collected by	: GLOBAL Environment & Mining Services
4	Particulars of sample collected	: Grab Sampling
5	Sampling Procedure	: GEMS-LD/SOP/32
6	Discipline	: Chemical
7	Group	: Pollution & Environment
8	Sample Type	: Ground Water
9	Sample Code	: 3795
10	Date of Sampling	: 13.11.2021
11	Sample Received	: 13.11.2021
12	Date of Analysis	: 13.11.2021
13	Date of Analysis Completion	: 20.11.2021
14	Report Issue Date	: 06.12.2021
15	Report Number	: ULR-TC532321000001163F

Sl. No	Parameters	Protocol	Unit	Hanumanahalli Village (GW2)	Standards as per IS: 10500:2012	
					Desirable Limits	Permissible Limits
1.	Colour	IS: 3025 (PART 4)- 1984, RA-2002 Platinum cobalt Method	Hazen	<5	5	15
2.	Conductivity	APHA 23 <sup>rd</sup> Edition 2017 2510 B (Pg. No.2-54)	μS/cm	2600	-	-
3.	Total Dissolved Solids	APHA 23 <sup>rd</sup> Edition 2017 2540 C (Pg. No.2-65)	mg/L	1634	500	2000
4.	pH	APHA 23 <sup>rd</sup> Edition 2017 4500 B (Pg. No.4-92 to 4-96)	-	7.36	6.5 to 8.5	NR
5.	Turbidity (NTU)	APHA 23 <sup>rd</sup> Edition 2017 2130 B (Pg. No.2-14)	NTU	0.3	1	5
6.	Total Suspended Solids	APHA 23 <sup>rd</sup> Edition 2017 2540 D (Pg. No.2-66 to 2-67)	mg/L	Nil	-	-
7.	Sulphate as SO <sub>4</sub>	APHA 23 <sup>rd</sup> Edition 2012 4500 SO <sub>4</sub> <sup>2-</sup> E (Page No. 4-190)	mg/L	127.32	200	400
8.	phosphorous as P	APHA 23 <sup>rd</sup> Edition 2017 4500-P D (Pg. No. 4-163 to 4-164)	mg/L	Nil	-	-
9.	Sodium as Na	APHA 23 <sup>rd</sup> Edition 2017 Na 3500 B (Pg. No.3-97 to 3-98)	mg/L	371.15	-	-
10.	Potassium as K	APHA 23 <sup>rd</sup> Edition 2017 K 3500 B (Pg. No.3-87 to 3-88)	mg/L	0.0	-	-
11.	Calcium as Ca	APHA 23 <sup>rd</sup> Edition 2017 3500 Ca B (Pg. No.3-84)	mg/L	160	75	200
12.	Magnesium as Mg	APHA 23 <sup>rd</sup> Edition 2017 3500-B Mg By calculation	mg/L	34.02	30	100
13.	Total Hardness as CaCO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2017 2340 C (Page No. 2-46)	mg/L	540	200	600
14.	Chloride as Cl	APHA 23 <sup>rd</sup> Edition 2017 4500 Cl- (Page No. 4-72)	mg/L	414	250	1000
15.	Fluoride as F	APHA 23 <sup>rd</sup> Edition 2012 4500 F- D (Page No. 4-87 to 4-88)	mg/L	1.16	1	1.5
16.	Nitrate Nitrogen as NO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2012 4500 NO <sub>3</sub> E (Pg. No.4-125 to 4-127)	mg/L	21.70	45	NR

**Note:**

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(Consulting Engineers, Mine designers, Geologist & Surveyors)

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HOSAPETE - 583201, Dist., Vijayanagara (Karnataka)

Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

### ANNEXURE-23

17.	Total Alkalinity as CaCO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2320 B (Pg. No.2-35)	mg/L	493.0	200	600
18.	Acidity as CaCO <sub>3</sub>	IS:3025 (part 22)-1986, RA-2014 Indicator method	mg/L	Nil	-	-
19.	Total Iron as Fe	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.24	0.30	NR
20.	Nickel as Ni	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.01	0.02	NR
21.	Manganese as Mn	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.1	0.10	0.30
22.	Copper as Cu	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.05	0.05	1.50
23.	Zinc as Zn	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.1	5	15
24.	Lead as Pb	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.01	0.01	NR
25.	Total Coli form count	APHA 23 <sup>rd</sup> Edition 9222-B (p.no.9-66) Membrane filter technique	MPN/100 ml	Ab	Shall not be detectable in any 100 ml sample	-
26.	Escherichia coli count	APHA 23 <sup>rd</sup> Edition 9222 (p.no.9-76) Membrane filter technique	MPN/100 ml	Ab	Shall not be detectable in any 100ml sample	-

Note: GW2: Hanumanahalli Village. NR-No relaxation. Ab-Absent.

INFERENCE	As per Standards IS: 10500:2012 Report Status: - Measured Values for the above parameters are within the limit.
-----------	--

*Mallikarjun S*  
Analysed By  
Mallikarjun S  
Chemist

*J. M. Thippeswamy*  
Verified By  
J. M. Thippeswamy  
Senior chemist



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(Consulting Engineers, Mine designers, Geologist & Surveyors)

3<sup>rd</sup> Main Road, Basaveswara Badavane,

HOSAPETE - 583201, Dist., Vijayanagara (Karnataka)

Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

ANNEXURE-24  
GEMS-LD/TF/23/01

### Analysis Report of Water Quality Data

- 1 Name of the Industry : BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
- 2 Customer Reference : WO/ADMIN/FY22/RO38
- 3 Sample collected by : GLOBAL Environment & Mining Services
- 4 Particulars of sample collected : Grab Sampling
- 5 Sampling Procedure : GEMS-LD/SOP/32
- 6 Discipline : Chemical
- 7 Group : Pollution & Environment
- 8 Sample Type : Ground Water
- 9 Sample Code : 3796
- 10 Date of Sampling : 13.11.2021
- 11 Sample Received : 13.11.2021
- 12 Date of Analysis : 13.11.2021
- 13 Date of Analysis Completion : 20.11.2021
- 14 Report Issue Date : 06.12.2021
- 15 Report Number : ULR-TC532321000001164F

Sl. No	Parameters	Protocol	Unit	Galemmana Gudi Village (GW3)	Standards as per IS: 10500:2012	
					Desirable Limits	Permissible Limits
1.	Colour	IS: 3025 (PART 4)- 1984, RA-2002 Platinum cobalt Method	Hazen	<5	5	15
2.	Conductivity	APHA 23 <sup>rd</sup> Edition 2017 2510 B (Pg. No.2-54)	μS/cm	2900	-	-
3.	Total Dissolved Solids	APHA 23 <sup>rd</sup> Edition 2017 2540 C (Pg. No.2-65)	mg/L	1830	500	2000
4.	pH	APHA 23 <sup>rd</sup> Edition 2017 4500 B (Pg. No.4-92 to 4-96)	-	7.57	6.5 to 8.5	NR
5.	Turbidity (NTU)	APHA 23 <sup>rd</sup> Edition 2017 2130 B (Pg. No.2-14)	NTU	0.5	1	5
6.	Total Suspended Solids	APHA 23 <sup>rd</sup> Edition 2017 2540 D (Pg. No.2-66 to 2-67)	mg/L	Nil	-	-
7.	Sulphate as SO <sub>4</sub>	APHA 23 <sup>rd</sup> Edition 2012 4500 SO <sub>4</sub> <sup>2-</sup> E (Page No. 4-190)	mg/L	125	200	400
8.	phosphorous as P	APHA 23 <sup>rd</sup> Edition 2012 4500-P D (Pg. No. 4-163 to 4-164)	mg/L	Nil	-	-
9.	Sodium as Na	APHA 23 <sup>rd</sup> Edition 2017 Na 3500 B (Pg. No.3-97 to 3-98)	mg/L	327	-	-
10.	Potassium as K	APHA 23 <sup>rd</sup> Edition 2017 K 3500 B (Pg. No.3-87 to 3-88)	mg/L	0.0	-	-
11.	Calcium as Ca	APHA 23 <sup>rd</sup> Edition 2017 3500 Ca B (Pg. No.3-84)	mg/L	124	75	200
12.	Magnesium as Mg	APHA 23 <sup>rd</sup> Edition 2017 3500-B Mg By calculation	mg/L	69.50	30	100
13.	Total Hardness as CaCO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2017 2340 C (Page No. 2-46)	mg/L	596	200	600
14.	Chloride as Cl	APHA 23 <sup>rd</sup> Edition 2017 4500 Cl- (Page No. 4-72)	mg/L	543	250	1000
15.	Fluoride as F	APHA 23 <sup>rd</sup> Edition 2012 4500 F- D (Page No. 4-87 to 4-88)	mg/L	1.21	1	1.5
16.	Nitrate Nitrogen as NO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2012 4500 NO <sub>3</sub> E (Pg. No.4-125 to 4-127)	mg/L	26.40	45	NR

**Note:**

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J.M.S



NABL Certificate No.: TC-5323

## GLOBAL ENVIRONMENT & MINING SERVICES

(Consulting Engineers, Mine designers, Geologist & Surveyors)

3<sup>rd</sup> Main Road, Basaveswara Badavane,

HOSAPETE - 583201, Dist., Vijayanagara (Karnataka)

Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

### ANNEXURE-24

17.	Total Alkalinity as CaCO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2320 B (Pg. No.2-35)	mg/L	552.50	200	600
18.	Acidity as CaCO <sub>3</sub>	IS:3025 (part 22)-1986, RA-2014 Indicator method	mg/L	Nil	-	-
19.	Total Iron as Fe	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.26	0.30	NR
20.	Nickel as Ni	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.01	0.02	NR
21.	Manganese as Mn	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.1	0.10	0.30
22.	Copper as Cu	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.05	0.05	1.50
23.	Zinc as Zn	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.1	5	15
24.	Lead as Pb	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.01	0.01	NR
25.	Total Coli form count	APHA 23 <sup>rd</sup> Edition 9222-B (p.no.9-66) Membrane filter technique	MPN/ 100 ml	Ab	Shall not be detectable in any 100 ml sample	-
26.	Escherichia coli count	APHA 23 <sup>rd</sup> Edition 9222 (p.no.9-76) Membrane filter technique	MPN/ 100 ml	Ab	Shall not be detectable in any 100ml sample	-

**Note: GW3: Galemmana Gudi Village. NR-No relaxation. Ab-Absent.**

<b>INFERENCE</b>	<b>As per Standards IS: 10500:2012</b> <b>Report Status: - Measured Values for the above parameters are within the limit.</b>
------------------	--

*Mallikarjun S*  
**Analysed By**  
Mallikarjun S  
Chemist

*J. M. Thippeswamy*  
**Verified By**  
J. M. Thippeswamy  
Senior chemist



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HOSAPETE - 583201, Dist., Vijayanagara (Karnataka)

Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

ANNEXURE-25  
GEMS-LD/TF/23/01

### Analysis Report of Water Quality Data

1	Name of the Industry	:	BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	:	WO/ADMIN/FY22/RO38
3	Sample collected by	:	GLOBAL Environment & Mining Services
4	Particulars of sample collected	:	Grab Sampling
5	Sampling Procedure	:	GEMS-LD/SOP/32
6	Discipline	:	Chemical
7	Group	:	Pollution & Environment
8	Sample Type	:	Ground Water
9	Sample Code	:	3797
10	Date of Sampling	:	13.11.2021
11	Sample Received	:	13.11.2021
12	Date of Analysis	:	13.11.2021
13	Date of Analysis Completion	:	20.11.2021
14	Report Issue Date	:	06.12.2021
15	Report Number	:	ULR-TC532321000001165F

Sl. No	Parameters	Protocol	Unit	Mariyammana Halli Village (GW4)	Standards as per IS: 10500:2012	
					Desirable Limits	Permissible Limits
1.	Colour	IS: 3025 (PART 4)- 1984, RA-2002 Platinum cobalt Method	Hazen	<5	5	15
2.	Conductivity	APHA 23 <sup>rd</sup> Edition 2017 2510 B (Pg. No.2-54)	μS/cm	3100	-	-
3.	Total Dissolved Solids	APHA 23 <sup>rd</sup> Edition 2017 2540 C (Pg. No.2-65)	mg/L	1912	500	2000
4.	pH	APHA 23 <sup>rd</sup> Edition 2017 4500 B (Pg. No.4-92 to 4-96)	-	7.48	6.5 to 8.5	NR
5.	Turbidity (NTU)	APHA 23 <sup>rd</sup> Edition 2017 2130 B (Pg. No.2-14)	NTU	0.7	1	5
6.	Total Suspended Solids	APHA 23 <sup>rd</sup> Edition 2017 2540 D (Pg. No.2-66 to 2-67)	mg/L	Nil	-	-
7.	Sulphate as SO <sub>4</sub>	APHA 23 <sup>rd</sup> Edition 2012 4500 SO <sub>4</sub> <sup>2-</sup> E (Page No. 4-190)	mg/L	175.80	200	400
8.	phosphorous as P	APHA 23 <sup>rd</sup> Edition 2012 4500-P D (Pg. No. 4-163 to 4-164)	mg/L	Nil	-	-
9.	Sodium as Na	APHA 23 <sup>rd</sup> Edition 2017 Na 3500 B (Pg. No.3-97 to 3-98)	mg/L	393.50	-	-
10.	Potassium as K	APHA 23 <sup>rd</sup> Edition 2017 K 3500 B (Pg. No.3-87 to 3-88)	mg/L	0.0	-	-
11.	Calcium as Ca	APHA 23 <sup>rd</sup> Edition 2017 3500 Ca B (Pg. No.3-84)	mg/L	186	75	200
12.	Magnesium as Mg	APHA 23 <sup>rd</sup> Edition 2017 3500-B Mg By calculation	mg/L	17.25	30	100
13.	Total Hardness as CaCO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2017 2340 C (Page No. 2-46)	mg/L	536	200	600
14.	Chloride as Cl	APHA 23 <sup>rd</sup> Edition 2017 4500 Cl- (Page No. 4-72)	mg/L	615	250	1000
15.	Fluoride as F	APHA 23 <sup>rd</sup> Edition 2012 4500 F- D (Page No. 4-87 to 4-88)	mg/L	0.53	1	1.5
16.	Nitrate Nitrogen as NO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2012 4500 NO <sub>3</sub> E (Pg. No.4-125 to 4-127)	mg/L	36.80	45	NR

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J.M.S



NABL Certificate No.: TC-5323

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HOSAPETE - 583201, Dist., Vijayanagara (Karnataka)

Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

### ANNEXURE-25

17.	Total Alkalinity as CaCO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2320 B (Pg. No.2-35)	mg/L	517.12	200	600
18.	Acidity as CaCO <sub>3</sub>	IS:3025 (part 22)-1986, RA-2014 Indicator method	mg/L	Nil	-	-
19.	Total Iron as Fe	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.28	0.30	NR
20.	Nickel as Ni	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.01	0.02	NR
21.	Manganese as Mn	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.1	0.10	0.30
22.	Copper as Cu	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.05	0.05	1.50
23.	Zinc as Zn	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.1	5	15
24.	Lead as Pb	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.01	0.01	NR
25.	Total Coli form count	APHA 23 <sup>rd</sup> Edition 9222-B (p.no.9-66) Membrane filter technique	MPN/ 100 ml	Ab	Shall not be detectable in any 100 ml sample	-
26.	Escherichia coli count	APHA 23 <sup>rd</sup> Edition 9222 (p.no.9-76) Membrane filter technique	MPN/ 100 ml	Ab	Shall not be detectable in any 100ml sample	-

**Note: GW4: Mariyammana Halli Village. NR-No relaxation. Ab-Absent.**

<b>INFERENCE</b>	<b>As per Standards IS: 10500:2012</b> <b>Report Status: - Measured Values for the above parameters are within the limit.</b>
------------------	--

*Mallikarjun S*  
**Analysed By**  
**Mallikarjun S**  
**Chemist**

*J.M.T.S*  
**Verified By**  
**J. M. Thippeswamy**  
**Senior chemist**



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NABL Certificate No.: TC-5323

## GLOBAL ENVIRONMENT & MINING SERVICES

(Consulting Engineers, Mine designers, Geologist & Surveyors)

3rd Main Road, Basaveswara Badavane,

HOSAPETE - 583201, Dist., Vijayanagara (Karnataka)

Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

ANNEXURE-26  
GEMS-LD/TF/23/01

### Analysis Report of Water Quality Data

1	Name of the Industry	: BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	: WO/ADMIN/FY22/R038
3	Sample collected by	: GLOBAL Environment & Mining Services
4	Particulars of sample collected	: Grab Sampling
5	Sampling Procedure	: GEMS-LD/SOP/32
6	Discipline	: Chemical
7	Group	: Pollution & Environment
8	Sample Type	: Ground Water
9	Sample Code	: 3798
10	Date of Sampling	: 13.11.2021
11	Sample Received	: 13.11.2021
12	Date of Analysis	: 13.11.2021
13	Date of Analysis Completion	: 20.11.2021
14	Report Issue Date	: 06.12.2021
15	Report Number	: ULR-TC532321000001166F

Sl. No	Parameters	Protocol	Unit	Transit House (GW5)	Standards as per IS: 10500:2012	
					Desirable Limits	Permissible Limits
1.	Colour	IS: 3025 (PART 4)- 1984, RA-2002 Platinum cobalt Method	Hazen	<5	5	15
2.	Conductivity	APHA 23rd Edition 2017 2510 B (Pg. No.2-54)	μS/cm	1330	-	-
3.	Total Dissolved Solids	APHA 23rd Edition 2017 2540 C (Pg. No.2-65)	mg/L	860	500	2000
4.	pH	APHA 23rd Edition 2017 4500 B (Pg. No.4-92 to 4-96)	-	7.59	6.5 to 8.5	NR
5.	Turbidity (NTU)	APHA 23rd Edition 2017 2130 B (Pg. No.2-14)	NTU	0.3	1	5
6.	Total Suspended Solids	APHA 23rd Edition 2017 2540 D (Pg. No.2-66 to 2-67)	mg/L	Nil	-	-
7.	Sulphate as SO <sub>4</sub>	APHA 23rd Edition 2012 4500 SO <sub>4</sub> <sup>2-</sup> E (Page No. 4-190)	mg/L	190	200	400
8.	phosphorus as P	APHA 23rd Edition 2017 4500-P D (Pg. No. 4-163 to 4-164)	mg/L	Nil	-	-
9.	Sodium as Na	APHA 23rd Edition 2017 Na 3500 B (Pg. No.3-97 to 3-98)	mg/L	165	-	-
10.	Potassium as K	APHA 23rd Edition 2017 K 3500 B (Pg. No.3-87 to 3-88)	mg/L	0.0	-	-
11.	Calcium as Ca	APHA 23rd Edition 2017 3500 Ca B (Pg. No.3-84)	mg/L	84	75	200
12.	Magnesium as Mg	APHA 23rd Edition 2017 3500-B Mg By calculation	mg/L	26.03	30	100
13.	Total Hardness as CaCO <sub>3</sub>	APHA 23rd Edition 2017 2340 C (Page No. 2-46)	mg/L	317.14	200	600
14.	Chloride as Cl	APHA 23rd Edition 2017 4500 Cl- (Page No. 4-72)	mg/L	71.50	250	1000
15.	Fluoride as F	APHA 23rd Edition 2012 4500 F- D (Page No. 4-87 to 4-88)	mg/L	0.34	1	1.5
16.	Nitrate Nitrogen as NO <sub>3</sub>	APHA 23rd Edition 2012 4500 NO <sub>3</sub> E (Pg. No.4-125 to 4-127)	mg/L	25.18	45	NR

**Note:**

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J. M. T.



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3<sup>rd</sup> Main Road, Basaveswara Badavane,

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Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

### ANNEXURE-26

17.	Total Alkalinity as CaCO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2320 B (Pg. No.2-35)	mg/L	<b>438.34</b>	200	600
18.	Acidity as CaCO <sub>3</sub>	IS:3025 (part 22)-1986, RA-2014 Indicator method	mg/L	<b>Nil</b>	-	-
19.	Total Iron as Fe	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<b>0.18</b>	0.30	NR
20.	Nickel as Ni	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<b>&lt;0.01</b>	0.02	NR
21.	Manganese as Mn	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<b>&lt;0.1</b>	0.10	0.30
22.	Copper as Cu	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<b>&lt;0.05</b>	0.05	1.50
23.	Zinc as Zn	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<b>&lt;0.1</b>	5	15
24.	Lead as Pb	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<b>&lt;0.01</b>	0.01	NR
25.	Total Coli form count	APHA 23 <sup>rd</sup> Edition 9222-B (p.no.9-66) Membrane filter technique	MPN/ 100 ml	<b>Ab</b>	Shall not be detectable in any 100 ml sample	-
26.	Escherichia coli count	APHA 23 <sup>rd</sup> Edition 9222 (p.no.9-76) Membrane filter technique	MPN/ 100 ml	<b>Ab</b>	Shall not be detectable in any 100ml sample	-

**Note: GW5: Transit House (BW). NR-No relaxation. Ab-Absent.**

<b>INFERENCE</b>	<b>As per Standards IS: 10500:2012</b> <b>Report Status: - Measured Values for the above parameters are within the limit.</b>
------------------	--

*Malli*  
**Analysed By**  
Mallikarjun S  
Chemist

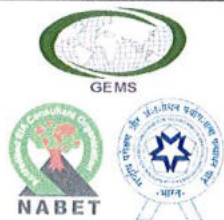
*J.M.T*  
**Verified By**  
J. M. Thippeswamy  
Senior chemist



**Note:**

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e-mail : gems\_hpt@yahoo.com

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ANNEXURE-27  
GEMS-LD/TF/23/01

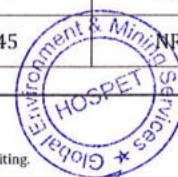
### Analysis Report of Water Quality Data

1	Name of the Industry	:	BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	:	WO/ADMIN/FY22/RO38
3	Sample collected by	:	GLOBAL Environment & Mining Services
4	Particulars of sample collected	:	Grab Sampling
5	Sampling Procedure	:	GEMS-LD/SOP/32
6	Discipline	:	Chemical
7	Group	:	Pollution & Environment
8	Sample Type	:	RO Drinking Water
9	Sample Code	:	3799
10	Date of Sampling	:	13.11.2021
11	Sample Received	:	13.11.2021
12	Date of Analysis	:	13.11.2021
13	Date of Analysis Completion	:	20.11.2021
14	Report Issue Date	:	06.12.2021
15	Report Number	:	ULR-TC532321000001167F

Sl. No	Parameters	Protocol	Unit	RO Drinking Water	Standards as per IS: 10500:2012	
					Desirable Limits	Permissible Limits
1.	Colour	IS: 3025 (PART 4)- 1984, RA-2002 Platinum cobalt Method	Hazen	<5	5	15
2.	Conductivity	APHA 23 <sup>rd</sup> Edition 2017 2510 B (Pg. No.2-54)	μS/cm	76	-	-
3.	Total Dissolved Solids	APHA 23 <sup>rd</sup> Edition 2017 2540 C (Pg. No.2-65)	mg/L	48	500	2000
4.	pH	APHA 23 <sup>rd</sup> Edition 2017 4500 B (Pg. No.4-92 to 4-96)	-	8.43	6.5 to 8.5	NR
5.	Turbidity (NTU)	APHA 23 <sup>rd</sup> Edition 2017 2130 B (Pg. No.2-14)	NTU	0.0	1	5
6.	Total Suspended Solids	APHA 23 <sup>rd</sup> Edition 2017 2540 D (Pg. No.2-66 to 2-67)	mg/L	Nil	-	-
7.	Sulphate as SO <sub>4</sub>	APHA 23 <sup>rd</sup> Edition 2012 4500 SO <sub>4</sub> <sup>2-</sup> E (Page No. 4-190)	mg/L	11.80	200	400
8.	phosphorous as P	APHA 23 <sup>rd</sup> Edition 2012 4500-P D (Pg. No. 4-163 to 4-164)	mg/L	Nil	-	-
9.	Sodium as Na	APHA 23 <sup>rd</sup> Edition 2017 Na 3500 B (Pg. No.3-97 to 3-98)	mg/L	9.50	-	-
10.	Potassium as K	APHA 23 <sup>rd</sup> Edition 2017 K 3500 B (Pg. No.3-87 to 3-88)	mg/L	0.0	-	-
11.	Calcium as Ca	APHA 23 <sup>rd</sup> Edition 2017 3500 Ca B (Pg. No.3-84)	mg/L	6.40	75	200
12.	Magnesium as Mg	APHA 23 <sup>rd</sup> Edition 2017 3500-B Mg By calculation	mg/L	1.51	30	100
13.	Total Hardness as CaCO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2017 2340 C (Page No. 2-46)	mg/L	22.22	200	600
14.	Chloride as Cl	APHA 23 <sup>rd</sup> Edition 2017 4500 Cl- (Page No. 4-72)	mg/L	7.94	250	1000
15.	Fluoride as F	APHA 23 <sup>rd</sup> Edition 2012 4500 F- D (Page No. 4-87 to 4-88)	mg/L	0.95	1	1.5
16.	Nitrate Nitrogen as NO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2012 4500 NO <sub>3</sub> E (Pg. No.4-125 to 4-127)	mg/L	2.16	45	NR

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J.M. 19



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Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

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### ANNEXURE-27

17.	Total Alkalinity as CaCO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2320 B (Pg. No.2-35)	mg/L	12.12	200	600
18.	Acidity as CaCO <sub>3</sub>	IS:3025 (part 22)-1986, RA-2014 Indicator method	mg/L	Nil	-	-
19.	Total Iron as Fe	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.10	0.30	NR
20.	Nickel as Ni	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.01	0.02	NR
21.	Manganese as Mn	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.1	0.10	0.30
22.	Copper as Cu	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.05	0.05	1.50
23.	Zinc as Zn	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.1	5	15
24.	Lead as Pb	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.01	0.01	NR
25.	Total Coli form count	APHA 23 <sup>rd</sup> Edition 9222-B (p.no.9-66) Membrane filter technique	MPN/100 ml	Ab	Shall not be detectable in any 100 ml sample	-
26.	Escherichia coli count	APHA 23 <sup>rd</sup> Edition 9222 (p.no.9-76) Membrane filter technique	MPN/100 ml	Ab	Shall not be detectable in any 100ml sample	-

Note: W6: RO Drinking Water. NR-No relaxation. Ab-Absent.

**INFERENCE** As per Standards IS: 10500:2012  
Report Status: - Measured Values for the above parameters are within the limit.

*Malli*  
**Analysed By**  
Mallikarjun S  
Chemist

*J.M.S*  
**Verified By**  
J. M. Thippeswamy  
Senior chemist



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Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

NABL Certificate No.: TC-5323

**ANNEXURE-28**  
**GEMS-LD/TF/23/01**

### Analysis Report of Water Quality Data

1	Name of the Industry	:	BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	:	WO/ADMIN/FY22/RO38
3	Sample collected by	:	GLOBAL Environment & Mining Services
4	Particulars of sample collected	:	Composite Sampling
5	Sampling Procedure	:	GEMS-LD/SOP/32
6	Discipline	:	Chemical
7	Group	:	Pollution & Environment
8	Sample Type	:	<b>Sewage Treatment Plant (Outlet)</b>
9	Date of Sampling	:	13.11.2021
10	Sample Received	:	13.11.2021
11	Date of Analysis	:	13.11.2021
12	Date of Analysis Completion	:	20.11.2021
13	Report Issue Date	:	<b>06.12.2021</b>
14	Report Number	:	<b>ULR-TC532321000001168F</b>

Sl. No.	Parameters	Protocol	Unit	Results			As per KSPCB Std
				STP 45 KLD	STP-1 90 KLD	STP-2 90 KLD	
		<b>Sample code</b>	-	<b>3800</b>	<b>3801</b>	<b>3802</b>	
1.	pH	APHA 23 <sup>rd</sup> Edition 2017 4500 B (Pg. No.4-92 to 4-96)	-	<b>7.80</b>	<b>7.35</b>	<b>7.52</b>	6.5 to 9.0
2.	Total Suspended Solids	APHA 23 <sup>rd</sup> Edition 2017 2540 D (Pg. No.2-66 to 2-67)	mg/L	<b>16.0</b>	<b>24.0</b>	<b>12.0</b>	<100
3.	Biochemical Oxygen Demand as BOD (3 days at 27°C)	IS:3025 (part 44)-1993, Reaffirmed -2019	mg/L	<b>6.0</b>	<b>9.0</b>	<b>4.0</b>	30
4.	Chemical Oxygen Demand as COD	APHA 23 <sup>rd</sup> Edition 2017 5220 C (Pg. No.5-19 to 5-20)	mg/L	<b>34.20</b>	<b>38.0</b>	<b>36.0</b>	50
5.	Oil & Grease	APHA 23 <sup>rd</sup> Edition 2017 5520 B (Pg. No.5-40 to 5-41)	mg/L	<b>Nil</b>	<b>Nil</b>	<b>Nil</b>	10

**Note:** BDL-Below detectable Limit. **INFERENCE:** The Measured values are within the Limit.

**STP 45 KLD** - Near Fortivia

**STP-1 90 KLD** -Near ISP Area

**STP-2 90 KLD** -Near Gunda Guest House

*Malli*  
**Analysed By**  
Mallikarjun S  
Chemist

*J.M.T*  
**Verified By**  
J. M. Thippeswamy  
Senior chemist



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e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

ANNEXURE-29  
GEMS-LD/TF/23/01

### Analysis Report of Water Quality Data

1	Name of the Industry	:	BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	:	WO/ADMIN/FY22/RO38
3	Sample collected by	:	GLOBAL Environment & Mining Services
4	Particulars of sample collected	:	Composite Sampling
5	Sampling Procedure	:	GEMS-LD/SOP/32
6	Discipline	:	Chemical
7	Group	:	Pollution & Environment
8	Sample Type	:	Waste Water
9	Date of Sampling	:	13.11.2021
10	Sample Received	:	13.11.2021
11	Date of Analysis	:	13.11.2021
12	Date of Analysis Completion	:	20.11.2021
13	Report Issue Date	:	06.12.2021
14	Report Number	:	ULR-TC532321000001169F

Sl. No.	Parameters	Protocol	Unit	Results		As per KSPCB Std
				Neutralization Pit 70 MW Power Plant	Neutralization Pit 2x70 MW Power Plant	
		Sample Code		3804	3805	
1.	pH	APHA 23 <sup>rd</sup> Edition 2017 4500 B (Pg. No.4-92 to 4-96)	-	8.15	8.06	6.5 to 9.0
2.	Total Suspended Solids	APHA 23 <sup>rd</sup> Edition 2017 2540 D (Pg. No.2-66 to 2-67)	mg/L	32.0	26.0	100
3.	Chemical Oxygen Demand as COD	APHA 23 <sup>rd</sup> Edition 2017 5220 C (Pg. No.5-19 to 5-20)	mg/L	140.0	90.0	250
4.	Oil & Grease	APHA 23 <sup>rd</sup> Edition 2017 5520 B (Pg. No.5-40 to 5-41)	mg/L	6.2	5.1	10

Note: BDL-Below detectable Limit

INFERENCE: The Measured values are within the Limit.

*Mallikarjun S*  
Analysed By  
Mallikarjun S  
Chemist

*J.M.T*  
Verified By  
J. M. Thippeswamy  
Senior chemist



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e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

**ANNEXURE-30**  
**GEMS-LD/TF/23/01**

### Analysis Report of Surface Water Quality Data

- 1 Name of the Industry : BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
- 2 Customer Reference : WO/ADMIN/FY22/RO38
- 3 Sample collected by : GLOBAL Environment & Mining Services
- 4 Particulars of sample collected : Composite Sampling
- 5 Sampling Procedure : GEMS-LD/SOP/32
- 6 Discipline : Chemical
- 7 Group : Pollution & Environment
- 8 Sample Type : Surface Water
- 9 Date of Sampling : 13.11.2021
- 10 Sample Received : 13.11.2021
- 11 Date of Analysis : 13.11.2021
- 12 Date of Analysis Completion : 20.11.2021
- 13 Report Issue Date : **06.12.2021**
- 14 Report Number : **ULR-TC532321000001170F**

Sl. No.	Parameters	Protocol	Unit	Results		IS 2296 - 1982 CLASS -B
				Danayakanakere Upstream	Danayakanakere Downstream	
		<b>Sample code</b>		<b>3806</b>	<b>3807</b>	
1.	pH	APHA 23 <sup>RD</sup> Edition 4500 H+B (Pg. No.4-95 to 4-99)	-	<b>7.66</b>	<b>7.50</b>	6.5-8.5
2.	Dissolved Oxygen	APHA 23 <sup>RD</sup> Edition 4500 C (Pg. No.4-146)	mg/L	<b>5.6</b>	<b>6.0</b>	>5.0
3.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	APHA 23 <sup>RD</sup> Edition 5210 B (Pg. No.5-6 to 5-10)	mg/L	<b>2.0</b>	<b>2.5</b>	3.0
4.	Fluorides (as F)	APHA 23 <sup>RD</sup> Edition 4500F-D (Pg. No.4-90 to 4-91)	mg/L	<b>0.67</b>	<b>0.74</b>	1.5
5.	Colour	APHA 23 <sup>RD</sup> Edition 2120 B (Pg. No.2-6 to 2-7)	Hazen	<b>12</b>	<b>16</b>	300
6.	Cyanides (as CN)	APHA 23 <sup>RD</sup> Edition 4500 CN (Pg. No.4-45 to 4-46)	mg/L	<b>BDL</b>	<b>BDL</b>	0.05
7.	Arsenic (as As)	APHA-23 <sup>RD</sup> Edition-3114 -B (Pg. No.3-36 to 3-40)	mg/L	<b>&lt;0.01</b>	<b>&lt;0.01</b>	0.2
8.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH)	IS:3025 (part 43)-1992, RA-2014, Chloroform extraction method	mg/L	<b>BDL</b>	<b>BDL</b>	0.005
9.	Chromium (as Cr <sup>6+</sup> )	APHA-23 <sup>RD</sup> Edition-3500 Cr B (Pg. No.3-71 to 3-72)	mg/L	<b>&lt;0.001</b>	<b>&lt;0.001</b>	1.0
10.	Anionic detergents (as MBAS)	APHA 23 <sup>RD</sup> Edition 5540 C (Pg. No.5-55 to 5-57)	mg/L	<b>BDL</b>	<b>BDL</b>	1.0
11.	<b>Total Coliform Organisms</b>					
	Total Coli forms	APHA 23 <sup>RD</sup> Edition 9221-C (Pg. No.9-72 to 9-74)	MPN/100 ml	<b>Absent</b>	<b>Absent</b>	500
	Escherichia coli or E. coli	APHA 23 <sup>RD</sup> Edition 9221-F (Pg. No.9-78 to 9-79)	MPN/100 ml	<b>Absent</b>	<b>Absent</b>	-

**Note:** BDL-Below detectable Limit

**INFERENCE:** The Measured values are within the Limit.

*Mallikarjun S*  
**Analysed By**  
**Mallikarjun S**  
**Chemist**

*J.M. Thippeswamy*  
**Verified By**  
**J. M. Thippeswamy**  
**Senior chemist**



**Note:**

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5. **The tests results marked with \* Recognised by MOEF & CC**
6. Recognised by Ministry of Environment, Forest and Climate Change for Laboratory
7. Recognised by Government of Karnataka, Maharashtra, Goa for DGPS survey





NABL Certificate No.: TC-5323

## GLOBAL ENVIRONMENT & MINING SERVICES

(Consulting Engineers, Mine designers, Geologist & Surveyors)

3<sup>rd</sup> Main Road, Basaveswara Badavane,

HOSAPETE - 583201, Dist., Vijayanagara (Karnataka)

Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

Website : [www.globalmining.in](http://www.globalmining.in)

BMM STAGE-I

ANNEXURE-31  
GEMS-LD/TF/23/01

### Analysis Report of Surface Water Quality Data

1	Name of the Industry	:	BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	:	WO/ADMIN/FY22/RO38
3	Sample collected by	:	GLOBAL Environment & Mining Services
4	Particulars of sample collected	:	Composite Sampling
5	Sampling Procedure	:	GEMS-LD/SOP/32
6	Discipline	:	Chemical
7	Group	:	Pollution & Environment
8	Sample Type	:	Surface Water
9	Date of Sampling	:	13.11.2021
10	Sample Received	:	13.11.2021
11	Date of Analysis	:	13.11.2021
12	Date of Analysis Completion	:	20.11.2021
13	Report Issue Date	:	06.12.2021
14	Report Number	:	ULR-TC532321000001171F

Sl. No.	Parameters	Protocol	Unit	Results		IS 2296 - 1982 CLASS -B
				Tungabhadra dam Upstream	Tungabhadra dam Downstream	
Sample Code				3808	3809	
1.	pH	APHA 23 <sup>RD</sup> Edition 4500 H+ B (Pg. No.4-95 to 4-99)	-	7.54	7.81	6.5-8.5
2.	Dissolved Oxygen	APHA 23 <sup>RD</sup> Edition 4500 C (Pg. No.4-146)	mg/L	5.8	6.2	>5.0
3.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	APHA 23 <sup>RD</sup> Edition 5210 B (Pg. No.5-6 to 5-10)	mg/L	Nil	Nil	3.0
4.	Fluorides (as F)	APHA 23 <sup>RD</sup> Edition 4500F D (Pg. No.4-90 to 4-91)	mg/L	0.37	0.53	1.5
5.	Colour	APHA 23 <sup>RD</sup> Edition 2120 B (Pg. No.2-6 to 2-7)	Hazen	8	8	300
6.	Cyanides (as CN)	APHA 23 <sup>RD</sup> Edition 4500 CN (Pg. No.4-45 to 4-46)	mg/L	BDL	BDL	0.05
7.	Arsenic (as As)	APHA-23 <sup>RD</sup> Edition-3114 -B (Pg. No.3 -36 to 3-40)	mg/L	<0.01	<0.01	0.2
8.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH)	IS:3025 (part 43)-1992, RA-2014, Chloroform extraction method	mg/L	BDL	BDL	0.005
9.	Chromium (as Cr <sup>6+</sup> )	APHA-23 <sup>RD</sup> Edition-3500 Cr B (Pg. No.3-71 to 3-72)	mg/L	<0.001	<0.001	1.0
10.	Anionic detergents (as MBAS)	APHA 23 <sup>RD</sup> Edition 5540 C (Pg. No.5-55 to 5-57)	mg/L	BDL	BDL	1.0
11.	Total Coliform Organisms,					
	Total Coli forms	APHA 23RD Edition 9221-C (Pg. No.9-72 to 9-74)	MPN/ 100 ml	Absent	Absent	500
	Escherichia coli or E. coli	APHA 23RD Edition 9221-F (Pg. No.9-78 to 9-79)	MPN/ 100 ml	Absent	Absent	-

Note: BDL-Below detectable Limit

INFERENCE: the measured values are within the Limit

*Mallikarjun S*  
Analysed By  
Mallikarjun S  
Chemist

*J. M. Thippeswamy*  
Verified By  
J. M. Thippeswamy  
Senior chemist



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3rd Main Road, Basaveswara Badavane,

HOSAPETE - 583201, Dist., Vijayanagara (Karnataka)

Ph : +918394 229433, 295018

e-mail : gems\_hpt@yahoo.com

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BMM STAGE-I

ANNEXURE-32  
GEMS-LD/TF/23/01

### Analysis Report of Surface Water Quality Data

1	Name of the Industry	: BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	: WO/ADMIN/FY22/RO38
3	Sample collected by	: GLOBAL Environment & Mining Services
4	Particulars of sample collected	: Composite Sampling
5	Sampling Procedure	: GEMS-LD/SOP/32
6	Discipline	: Chemical
7	Group	: Pollution & Environment
8	Sample Type	: Surface Water
9	Date of Sampling	: 13.11.2021
10	Sample Received	: 13.11.2021
11	Date of Analysis	: 13.11.2021
12	Date of Analysis Completion	: 20.11.2021
13	Report Issue Date	: 06.12.2021
14	Report Number	: ULR-TC532321000001172F

Sl. No.	Parameters	Protocol	Unit	Results		IS 2296 - 1982 CLASS -B
				KempuHalla Upstream	KempuHalla Downstream	
			Sample code	3810	3811	
1.	pH	APHA 23 <sup>RD</sup> Edition 4500 H+ B (Pg. No.4-95 to 4-99)	-	8.10	7.84	6.5-8.5
2.	Dissolved Oxygen	APHA 23 <sup>RD</sup> Edition 4500 C (Pg. No.4-146)	mg/L	5.2	5.8	>5.0
3.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	APHA 23 <sup>RD</sup> Edition 5210 B (Pg. No.5-6 to 5-10)	mg/L	1.5	2.0	3.0
4.	Fluorides (as F)	APHA 23 <sup>RD</sup> Edition 4500F-D (Pg. No.4-90 to 4-91)	mg/L	1.17	1.24	1.5
5.	Colour	APHA 23 <sup>RD</sup> Edition 2120 B (Pg. No.2-6 to 2-7)	Hazen	22	18	300
6.	Cyanides (as CN)	APHA 23 <sup>RD</sup> Edition 4500 CN- (Pg. No.4-45 to 4-46)	mg/L	<0.01	<0.01	0.05
7.	Arsenic (as As)	APHA-23 <sup>RD</sup> Edition-3114 -B (Pg. No.3 -36 to 3-40)	mg/L	BDL	BDL	0.2
8.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH)	IS:3025 (part 43)-1992, RA-2014, Chloroform extraction method	mg/L	<0.001	<0.001	0.005
9.	Chromium (as Cr <sup>6+</sup> )	APHA-23 <sup>RD</sup> Edition-3500 Cr B (Pg. No.3-71 to 3-72)	mg/L	BDL	BDL	1.0
10.	Anionic detergents (as MBAS)	APHA 23 <sup>RD</sup> Edition 5540 C (Pg. No.5-55 to 5-57)	mg/L	BDL	BDL	1.0
11.	Total Coliform Organisms,					
	Total Coli forms	APHA 23 <sup>RD</sup> Edition 9221-C (Pg. No.9-72 to 9-74)	MPN/100 ml	Absent	Absent	500
	Escherichia coli or E. coli	APHA 23 <sup>RD</sup> Edition 9221-F (Pg. No.9-78 to 9-79)	MPN/100 ml	Absent	Absent	-

Note: BDL-Below detectable Limit

INFERENCE: the measured values are within the Limit

*Malli*  
Analysed By  
Mallikarjun S  
Chemist

*J.M.T*  
Verified By  
J. M. Thippeswamy  
Senior chemist



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