

The Sandur Manganese & Iron Ores Limited

(An ISO 9001:2015; ISO 14001:2015 and OHSAS 18001:2007 certified company)
CIN:L85110KA1954PLC000759; Website: www.sandurgroup.com

REGISTERED OFFICE

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CORPORATE OFFICE

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Ref. No. SMIORE/ENV/ECSC/07

Date : 29.11.2021

To
The Addl. Principal Chief Conservator of Forests,
Ministry of Environment Forests and Climate Change,
Regional Office (Southern Zone),
Bengaluru - 560034.

Sub: Submission of Six Monthly Compliance report M/s Sandur Manganese and Iron Ores Ltd, Vyasanakere, M M Halli Post Hospet , Karanataka for the period 1st April 2021 to 30th September 2021 for Expansion of Existing Ferro Alloy Plant to 1.0 MTPA Integrated Steel Plant

Ref: Environmental Clearance vide letter No F.No. J-11011/205/2014-IA-II(I) dated 25th June,2018

Dear Sir,

With reference to the subject cited above and EC referred, herewith we are submitting the six monthly compliance report along with the Environmental monitoring report of our plant in respect of our unit M/s. The Sandur Manganese & Iron Ores Limited, Vyasanakere, Mariyammanahalli, Hosapete Taluk, Ballari District, Karnataka for the period 1st April 2021 to 30th September 2021. This is for your kind perusal and records.

Kindly acknowledge the receipt of the same

Thanking you.

For The Sandur Manganese & Iron Ores Limited

Authorized Signatory



1. Member Secretary, KSPCB Bengaluru
2. CPCB, Zonal office (South), Bengaluru
3. The Environmental Officer, KSPCB, Ballari

ಕರ್ನಾಟಕ ರಾಜ್ಯ ಪರಿಸರ ನಿರೀಕ್ಷಣಾ ಮಂಡಳಿ
ಪ್ರಧಾನ ಕಛೇರಿ, ಬೆಂಗಳೂರು
ಸ್ವೀಕೃತಿ ದಿನಾಂಕ
ಸ್ವೀಕೃತಿ ಸಂಖ್ಯೆ: 04
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29/11/2021

MINES OFFICE: Deogiri - 583112, Sandur Taluk, Ballari District

Tel: +91 8395 271025 / 28 / 29 / 40; Fax: +91 8395 271066

PLANT OFFICE: Metal & Ferroalloy Plant, Vyasanakere, Mariyammanahalli - 583 222, Hosapete Taluk, Ballari District
Tel: +91 8394 244450 / 244335

Six Monthly Environmental Clearance Compliance Report

(April-2021 to September- 2021)

For

Environmental Clearance obtained for 1.0 MTPA Integrated Steel Project of
M/s. The Sandur Manganese & Iron Ore Ltd., Vide F.No. J-110011/205/2014-IA-II(I)
dated 25th June 2018

Steel Plant Project- 1.0 MTPA

Submitted By

The Sandur Manganese & Iron Ores Limited

Metal & Ferro Alloy Plant, Vysanakere, Mariyammanahalli – 583222, Hosapete Taluk,
Ballari District, Karnataka

Submitted To

Additional Principal Chief Conservator of Forests,
Ministry of Environment Forest and Climate Change,
Regional Office (SZ) Kendirya Sadan, 4th Floor,
E&F Wings, 17TH main road, Kormangala II block,
Bangalore-560034

HALF-YEARLY COMPLIANCE REPORT**1.0 Project Details**

Name of the Project	Expansion of existing Ferro Alloy Plant by installation of 1MTPA steel plant.
Location	M/s. The Sandur Manganese & Iron Ores Ltd Metal & Ferro Alloy Plant, Vyasanakere, Mariyammanahalli-583 222 Hosapete Taluk, Ballari(Dist.) Karnataka
EC. Letter No.	F.No. J-11011/205/2014-IA-II (I) dated 25 th June 2018
Total Area	129.82 Ha
Total Proposed Green Belt Area	42.82 Ha
Proposed Project Cost	Rs. 2300 Crores

Part A- Specific Conditions		
SI No	EC Condition	Status of Compliance
1	Dust Control Measures along the National Highway	
a	Regular sprinkling of water by deploying water tankers at a frequency of thrice a day.	The Water tanker (4500 liters) has been deployed dedicatedly for sprinkling water on roads Connecting the plant and also internal roads, thrice a day . In addition to this water sprinkler system has been roads in the plant . The Photographs of the sprinkler system and also the water Tanker sprinkling the water on roads is attached for your reference .
b	Avenue Plantation both the sides of the road for a length of 3 kms with broad - leave species.	We are in discussion with NHAI & Forest Department for working out a concrete plan for taking up Avenue Plantation along the NH-50 which passes in front of our plant . As still the service road works and drain works are in progress after completion of same the Avenue plantation work will be started after obtaining required clearances from forest department and NHAI authorities.
c	Maintenance of the road near the plant premises such as filling of potholes, etc.	The road near the Plant is constantly being maintained in good condition. Regular Maintenance of roads carried out. Also we are starting the RCC Road work connecting the Plant and also internal roads in phases once the Mansoon completes.
2	An amount of Rs 70.00 crores towards Enterprise Commitment (ESC) shall be utilized as capital expenditure in project mode. The project shall be completed in concurrence with the implementation of the expansion and estimated on the basis of scheduled Rates.	We have budgeted an amount of ₹ 70 crore under Corporate Environment Responsibility (CER) to be spent during the Project implementation period in areas of Health & Sanitation, Education, and Supply for Drinking Water, sports promotion in villages etc. We executed related works accordingly.
3	Green belt shall be developed in 33.92 Ha with a native tree species in accordance with CPCB guidelines. The 15 mtr wide greenbelt shall inter alia cover the entire periphery of the plant.	We have allocated 42.82 Ha for creating green belt in our Plant premises. We have also operating exclusive Nursery for developing saplings for green belt and landscaping. Presently about 48000 saplings were planted as a part of Green Belt inside the plant around the periphery of the plant area, 84,775 saplings are hourished in nursery. We are in process of covering the balance area progressively in phased manner. Photos Showing greenery and Nursery for your reference .
4	The capital cost of Rs. 40.00 Crores and annual recurring cost Rs. 8.0 Crores towards the environment protection measures shall be provide for separately. The funds so provided shall not be diverted for any other purpose.	We have allocated a budget of ₹ 40 crore towards capital cost and ₹ 8 crores as recurring cost for environment protection measures. Accordingly, we have spent money for purpose for the installation of Pollution control equipment like Baghouses, Chimneys, dust extraction systems for RMHS ,sprinkler systems Online Stack monitoring systems, AAQMS, We will ensure that this fund is used solely for this purpose .Also we will spend the reserved funds for same purpose in the next phases of the project The Photographs of the same enclosed for your reference .
5	Kitchen waste shall be composted or converted to biogas for further use.	Around 1600 kg/ month of organic waste (kitchen waste) is generated from our canteens, which is being composted and used in our Nursery as manure for plants

pepds



B. General Conditions:		
SI No	EC Condition	Status of Compliance
1	Dust Control Measures along the National Highway	
a	Install 24*7 continuous emission monitoring system at process stacks to monitor stack emission with respect to standards prescribed in Environment (Protection) Rules 1986 (G.S.R 277 (E) dated 31st march 2012; G.S.R 414 (E) dated 30th May 2008 as amended from time to time; S.O. 3305 (E) dated 7th December 2015 as amended from time to time from time to time) and connected to SPCB and CPCB online and calibrate these system from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.	We have already installed and connected to CPCB &KSPCB servers.
b	Monitor fugitive emissions in the plant premises at least once every quarter through labs recognized under Environment (protection) Act 1986.	M/s. MSV analytical Laboratories, Ballari whose Environmental Laboratory is monitoring fugitive emission with in the plant every quarter report enclosed in annexure accredited by MoEF&CC, New Delhi, and necessary report are submitted along with the Compliance Report in Annexure - 1.
c	Install system carryout Continuous Ambient Air Quality monitoring for parameters relevant to pollutants released as per National Ambient Air Quality Standards issued by the ministry vide G.S.R No. 826(E) dated 16th November, 2009 (as amended from time to time) within and outside the plant area at least at four locations one within and three outside the plant area at an angle of 120° each, covering upwind and downwind directions;	We have already installed one CAAQMS Station within the plant, Which in operation. We are in the process of identifying the location outside the plant the same shall be installed soon.
d	Install cameras at suitable locations for 24*7 recording of battery emissions on the both sides of coke oven batteries and videos shall be preserved for at least one-month recordings;	High Resolution Cameras were installed at all critical areas .
e	Provide sampling facility at process stacks and at quenching tower as per GPCB guidelines for manual monitoring of emissions;	Required sampling points are provided as per standard from which the sampling were being taken.
f	Submit monthly summary report of continuous stack emission and air quality monitoring and results of manual stack monitoring for calibrations for CEMS and manual monitoring of air quality / fugitive emission to regional office of MOEF&CC, Zonal; office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.	We are continuously monitoring stack emissions and air quality emissions and revalidate the data with manual monitoring data. We are submitting the reports to KSPCB, Ballari and Bengaluru and a copy to CPCB Zonal Office at Bengaluru and MoEF&CC Zonal Office along with six-monthly monitoring report.




SI No	EC Condition	Status of Compliance
2	The project proponent shall (Water Quality Monitoring):	
a	Install 24*7 continuous effluent monitoring system at all discharge points with respect to standards prescribed in Environment (Protection) Rules 1986 (G.S.R 277 (E) dated 31st March 2012; G.S.R 414 (E) dated 7th December 2015 as amended from time to time) and connected to SPCB and CPCB online and calibrate these systems from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.	As our coke oven is a non-recovery type coke oven there is no generation of any effluents hence the required system not installed.
b	Monitor regularly ground water quality at least twice a year (pre and post monsoon) at sufficient numbers of piezometers / sampling wells in the plant and adjacent areas through labs recognized under Environment (Protection) Act, 1986 and NABL accredited laboratories; and	Surface and ground water monitoring at various locations are being done M/s. MSV analytical Laboratories, and analysis reports also being sent to RO KSPCB regularly.
c	Submit monthly summary report of continuous effluent monitoring and results of manual effluent testing for calibration of CEMS and manual monitoring of ground water quality to regional office of MOEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.	As our coke oven is a non-recovery type coke oven there is no generation of any effluents hence the required continuous effluent monitoring system not installed and not able to submit the report.
3	The project proponent shall (Air pollution control);	
a	Ensure the ambient air quality G.S.R. No 826(E) dated 16 th November, 2009 (as amended from time to time) around the project site.	Complied.
B	Provide appropriate Air Pollution Control (APC) system for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed stack emission and fugitive emission standards.	Three de-dusting systems are provided for Coke oven at a cost of ₹.94.5 lakhs in Crusher, Cutter and Screen building. Pulse Jet Baghouse facility was installed at the existing FA plant at a cost of ₹.5.5 crores. Also Existing bag houses are refurbished and up graded at a cost of ₹ 5 crores. Thus the total investment shall be ₹11.445 crores
C	Provide leakage detection and mechanized bag cleaning facilities for better maintains of bags;	Mechanized bag cleaning facilities are provided.
D	Provide secondary emission control system at SMS Converters;	The SMS plant is proposed to install during second phase of project and required secondary emission control system Will be provided during Installation of SMS project.
E	Provide pollution control system in the steel plant as per the CREP Guidelines of CPCB;	We have provided all Pollution control system in the coke oven plant as per the CREP guidelines of CPCB and also will be provided during balance phases of proposed steel plant .
F	Provide sufficient number of mobile or stationery vacuum cleaners to clean plant roads, shop floors, roofs regularly;	Already we are using the same in plant and as suggested will provide further systems .

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SI No	EC Condition	Status of Compliance
G	Recycle and reuse iron ore fines, coal and coke fines, lime fines and such other fines collected in the pollution control devices and vacuum cleaning devices in the process after briquetting/agglomeration;	Coke and coal fines generated during the process are recycled.
H	Use leak proof trucks / dumpers carrying coal and other raw materials and cover the with tarpaulin;	All the truck used for Raw material handling are well maintained to avoid any spillage and Use of Tarpaulin cover is in practice to cover the Raw materials .
I	Provide facilities for spillage collection for coal and coke on wharf of coke oven batteries (Chain conveyors, land based Industrial vacuum cleaning facility);	All the equipment are designed to minimize spillages and however cleaning carried out on regular basis using mechanized equipment and manually .
J	Install land based APC systems to control coke pushing emission.	All the required Emission control systems were provided for Coke pushing systems and emission norms are being maintained well below the stipulated Norms stipulated.
K	Also monitor CO, HC and O ₂ in flue gases of the coke oven battery to detect combustion efficiency and cross leakages in the chamber;	On line gas monitors is provided to monitor CO, HC, S and O ₂ in the flue gases. And combustion will be regularly and adjusted accordingly to ensure the Emission control norms are maintained well below .
L	Provide vapor absorption system in place of vapor compression system for cooling of coke oven gas in case of recovery type coke ovens;	Not applicable as our coke oven is non-recovery type coke oven.
M	Provide catalytic conversion of NH ₃ to N ₂ in coke oven gas for reduction of NO _x emissions in combustion facilities using CO gas;	Not applicable as our coke oven is a non-recovery type coke oven
n	In case concentrated ammonia liquor is incinerated, adopt high temperature incineration to destroy Dioxins and Furans. Suitable NO _x control facility shall be provided to meet the prescribed standards;	Not applicable as our coke oven is a non-recovery type coke oven
o	The coke oven gas be subjected to desulphurization if the Sulphur content in the coal exceeds 1%;	As the coals being used are imported and all precautions were taken to ensure and purchase coals with sulphur content is less than 1%. Hence desulphurisation for coke oven gas is not envisaged.
p	Provide wind shelter fence and chemical spraying on the raw material stock piles; and	Coal is stored in covered shed.
q	Design the ventilation system for adequate air changes as per ACGIH document for all tunnels, motor houses, oil cellars	For all the fuel feeding tunnels, motor houses, Hydraulic rooms and other closed rooms are provided with required ventilation systems like, exhaust fans, air circulation systems.
4	The project proponent shall (water pollution control);	
a	Provide the ETP for coke oven and by product to meet the standards prescribed in G.S.R 277 (E) 31st March 2012 as amended from time to time;	Our coke oven is non-recovery type and there is no generation of wastewater. Hence, not applicable.
b	Adhere to 'zero liquid discharge';	All the waste water generated with in the plant is treated and used for dust suppression system and greenery and ensured Zero liquid discharge .



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SI No	EC Condition	Status of Compliance
c	Provide sewage treatment plant for domestic waste water;	will be complied.
d	Provide garland drains and collection pits for each stock pile to arrest the run-off in the event of heavy rains and to check the water pollution due to surface run off;	We have already provided garland drainage system which connects every corner of our plant and further will be developed based on requirement .
e	Provide tyre washing facilities at the entrance of the plant gates;	Already Provided .
f	Explore extensive use of RO technology to recycle permeate to the plant to reduce fresh water demand;	The same has been implemented.
g	Introduce CO ₂ injection in GCP of SMS to reduce pH in circulating water to ensure optimal recycling of treated water for converter gas cleaning; and	As we have done only coke oven plant and WHRB boilers in the first phase of project the SMS plant is proposed in second phase ,This will be done during during SMS project.
h	Install RO for water softening in place of conventional water softening that use huge amount of salt in order to reduce TDS in plant water system and increase recycling to conserve water	We have provided RO plant at our Power Plant for water softening.
5	The project proponent shall (Water Conservation):	
a	Practice rainwater harvesting to maximum possible extent;	Rain water harvesting using trenches is already in place and will be practiced to the maximum extent possible.
b	Not use treated water from ETP of COBP for coke quenching;	Not applicable as there is no COBP.
c	Provide water meters at the inlet to all unit processes in the steel plants; and	Required water meters are provided at the inlet of all process units .
d	Make efforts to minimize water consumption in the steel plant complex by segregation of used water, practicing cascade use and by recycling treated water	Implemented where ever possible.
6	The Project proponent shall (Energy Conservation):	
a	Provide TRTs to recover energy from top gases of Blast Furnace;	As we have done only coke oven plant and WHRB boilers in the first phase of project the BF plant is proposed in second phase ,This will be done during BF project.
b	Provide CDQ for coke quenching for both recovery and non-recovery type coke ovens;	NA .We have already received amendment order from MoEF&CC vide letter no. F.No.J-11011/205/2014-IA.II(I) dated 11.9.2019 where in the provision of CDQ is deleted.
c	Practice waste heat recovery from Sinter Plants coolers and Sinter Machines;	Waste heat recovery systems shall be provided for Sinter Plant during installation.
d	Use torpedo ladle for hot metal transfer as far as possible. If not use ladles covers for open top ladles;	Will be complied during BF project stage.
e	Use hot charging of slabs and billets/blooms as far as possible;	Shall be complied during installation of Rolling mill.
f	Provide waste heat recovery systems in all units where the flue gas or process gas exceeds 300°C;	All ready we have installed Waste Heat Recovery Boiler (WHRB) for the coke oven plant and are in operation . We will install WHRS for during future projects and utilise all the waste gases produced during the process.
g	Explore feasibility to install WHRS at Waste Gases from BF stoves; Sinter Machine; Sinter cooler, and all reheating furnaces and if feasible shall be installed;	Shall be complied during installation of Blast furnace and Sinter plant in the next phase of project.



 The Sandur Manganese & Iron Ore Limited
 Vyasankere

SI No	EC Condition	Status of Compliance
h	Restrict Gas flaring to <1%;	Will be ensured.
i	Provide solar power generation of roof tops buildings, for solar light for all common areas, street lights, parking around project area and maintain the same regularly;	As part of reducing energy demands for our plant, we being in solar dominant region, already we have installed many roof top Solar systems and solar street lights in the plant . Also we have program to install further solar systems utilize solar energy to maximum extent possible for cooling, street lights, lights and low energy consumption equipment at our plant .
J	Provide LED lights in their offices and residential areas; and	Complied.
k	Ensure installation of regenerative type burners on all reheating furnaces	Will be complied during Blast Furnace installation .
7	Dry quenching (CDQ) system shall be installed along with power generation facility from waste heat recovery from hot coke.	We have already received amendment order from MoEF&CC vide letter no. F.No.J-11011/205/2014-IA.II(I) dated 11.9.2019 where in the provision of CDQ is deleted.
8	In case of Non- Recovery coke ovens, the gas main carrying hot flue gases to the boiler, shall be insulated to conserve heat and to maximize heat recovery.	As a special design we have installed RCC gas tunnel with complete refractory lining and insulation carrying the coke oven gas to WHRB to ensure minimum loss of heat energy .
9	Tar sludge and waste oil shall be blended with coal charged in coke ovens (applicable only to recovery type coke ovens).	Not applicable as our coke oven is a non-recovery type Coke Oven
10	Carbon recovery plant to recover the elemental carbon present in GCP slurries for use in sinter plant shall be installed.	Will be installed during Sinter Plant project which is proposed in next phase.
11	Waste recycling plant shall be installed to recover scrap, metallic and flux for recycling to sinter plant and SMS.	Will be installed SMS Plant project which is proposed in next phase.
12	Used refractories shall be recycled as far as possible.	Will be complied.
13	SMS slag after metal recovery in waste recycling facility shall be conditioned and used for road making, railway tract ballast and other applications. PP shall install a waste recycling facility to recover metallic and flux for recycle to sinter plant. PP shall establish linkage for 100% reuse of rejects from waste recycling Plant.	We will install this along with SMS.
14	100% utilization of fly shall be ensured. All the fly ash shall be provided to cement and brick manufactures for further utilization and Memorandum of Understanding shall be submitted to the Ministry's Regional Office	Already in practice in our existing Ferro-alloy Plant and Power plant.
15	Sufficient number of color coded waste collection bins shall be constructed at the shop floors in each shop to systematically segregate and store waste materials generated at the shop floors (other than Process waste) in designated colored bins for value addition by promoting reuse of such wastes and for good housekeeping.	Already the waste collection bins of different color codes with indicators provided at different shop floors for collection of waste materials.



 P. S. P. S.

SI No	EC Condition	Status of Compliance
16	The PP shall prepare GHG emissions inventory for the plant and shall submit the programmed for reduction of the same including carbon sequestration including plantation.	We will maintain Green House Gas emission inventory for our Plant. We have already started to develop green belt around our plant. We have envisaged a systematic plan to develop greenery in and around the plant. We have already planted 45,000 saplings as part of this and balance 43,775 saplings shall be planted progressively.
17	Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.	HIRA for coke oven plant has been conducted by professional party after commissioning the coke oven.
18	The PP shall carry out heat stress analysis for the workmen who work in high temperature work zone and provide Personal Protection Equipment (PPE) as per the norms of factory Act.	We have provided high quality Personal Protection Equipment (PPE) to workmen inside the plant, including suitable PPE to workmen who work in high temperature work. We have also taken steps to frequently rotate staff in such region so that they are not continuously exposed to such extreme heat and temperature conditions.
19	The PP shall adhere to the corporate environmental policy and system of the reporting of any infringements / noncompliance of EC conditions at least once in a year to the Board of Directors and the copy of the board resolution shall be submitted to the MoEF&CC as a part of six-monthly report.	We will comply and adhere to corporate environmental policy of reporting of any infringements / non-compliance of EC conditions to the Board of Directors of the Company.
20	All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the iron and steel plants shall be implemented.	We will implement the same as per the guidelines.
21	A dedicated environmental cell with qualified personnel, shall be established. The head of the environmental cell shall report directly to the head of the organization.	We have established an Environmental Management Cell. This cell directly reports to Head of Organization of SMIORE, Hosapete.
22	Provision shall be made for the housing of construction labor within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile STP, Safe drinking water, medical health care, creche etc. the housing may be in the form of temporary structures to be removed after the completion of the project.	Temporary Housing for construction Workmen were established. All necessary facilities are Provided. The same has been removed after completion of the project.
23	The project authorities must strictly adhere to the stipulations made by the state Pollution Control Board and State Government.	We will adhere to all the conditions stipulated by KSPCB as applicable to our plant.
24	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change (MoEF&CC).	Will be ensured.




SI No	EC Condition	Status of Compliance
25	The waste oil, grease and other hazardous waste like acidic sludge from pickling, galvanizing, chrome plate mills etc. shall be disposed as per the Hazardous & Other waste (Management & Transboundary Movement) Rules, 2016. Coal tar sludge shall be recycled to coke ovens.	The rules and regulations in accordance with the Hazardous Wastes and other Waste (Management and Handling & Trans boundary) Rules, 2016 has been followed.
26	Oil collection pits shall be provided in oil cellars to collect and reuse/recycle spilled oil. Oil collection trays shall be provided under coils on saddles in cold rolled coil storage area	Are complied.
27	The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dB(A) during day time and 70 dB(A) during night time .	This is being complied with (Ref Annexure-I).
28	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	This is being complied with. We have an extensive health care facility at the Plant.
29	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP report.	Environmental protection measures and safeguards as proposed in the EIA report are being complied with.
30	The project proponent shall (Post-EC monitoring):	
a	Send a copy of environmental clearance letter to the heads of Local Bodies, Panchayat, Municipal bodies and relevant offices of the Government;	We have already submitted EC copy to all the concerned persons.
b	Put on the clearance letter on the website of the company for access to the public.	We have published the EC copy on our website for public information. We have also displayed the EC in our Plant main office and made access to any public .
c	Inform the public through advertisement within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language that the project has been accorded environmental clearance by the ministry and copies of the clearance letter are available with the SPCB and may also be seen at website of the Ministry of Environment	Already complied.
d	Upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same periodically;	Noted. Copy of Monitoring data being sent to concerned statutory departments.
e	Monitor the criteria pollutants level namely; PM ₁₀ , SO ₂ , NO _x (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company;	We have started Online monitoring of PM ₁₀ , SO ₂ and NO _x parameters as per the NAAQs. The results are being submitted to KSPCB monthly and MoEF&CC half yearly. The Parameters monitored online are displayed on real time at entrance of the plant for visibility of the general public at any time and same will be put on website of the company. The Photographs of the display installed at Main gate of the plant.




SI No	EC Condition	Status of Compliance
f	Submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the regional office of MoEF&CC, the respective zonal office of CPCB and the SPCB;	Complied.
g	Submit the environmental statement for each financial year in Form-V to the concerned state Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company;	We are submitting copy of environmental statement for financial year in Form V to KSPCB regularly.
h	Inform the Regional office as well as the ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	Same has been Informed to all concerned departments



ENVIRONMENTAL MONITORING REPORT

April, 2021

**Project : Iron & Steel Plant
at
Vysanakere village,
Hosapete Taluk,
Ballari District, Karnataka.**

**M/s. Sandur Manganese & Iron Ores Limited
Sandur,
Ballari District, Karnataka**

CONSULTANT

MINERAL ENGINEERING SERVICES

Mining & Environmental Engineers
(Recognised Environmental Laboratory by MoEF)
25/XXV, Club Road, BALLARI - 583 103.

Tel/Fax:08392-267421
E-mail:mes_msraju@yahoo.co.uk

LIST OF TABLES

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1	Analysis Report of Ambient Air Quality	1 to 4
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MINERAL ENGINEERING SERVICES



(Recognised by GOI, MoEF&CC under E(P) Act 1986 Vide Gazette Notification
No. S.O. 857 (E) dated 26.02.2018. Recognition valid upto 25.02.2023

ISO9001:2015
OHSAS (ISO 45001:2018)

Core zone

Table No. 1

ANALYSIS REPORT OF AMBIENT AIR QUALITY

MES/AQ/FTR/08/00

Name of the Project	: Iron & Steel Plant at Vyasanakere village, Hosapete Taluk, District Ballari State Karnataka					
Name of the Client	: M/s. Sandur Manganese & Iron Ores Limited					
Station at & Code	: A - 1, Core zone near SMIORE Colony					
Duration	: 24 Hrs					
Date of Report	: 07.05.2021					
Reference IS 5182	Report No : MES/SS/ARN/208					
Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
02.04.2021	9	19	36	20	<20	<1
03.04.2021	10	16	54	30	<20	<1
09.04.2021	9	11	44	28	<20	<1
10.04.2021	14	15	40	24	<20	<1
14.04.2021	11	17	55	34	<20	<1
15.04.2021	8	14	45	22	<20	<1
23.04.2021	9	16	37	20	<20	<1
24.04.2021	10	22	51	28	<20	<1
26.04.2021	7	11	43	26	<20	<1
27.04.2021	8	13	30	18	<20	<1
Limits for Industrial , Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
02.04.2021	0.09	<0.5	<0.5	<0.5	0.15	20
03.04.2021	0.05	<0.5	<0.5	<0.5	0.31	24
09.04.2021	0.16	<0.5	<0.5	<0.5	0.18	23
03.04.2021	0.05	<0.5	<0.5	<0.5	0.31	24
14.04.2021	0.08	<0.5	<0.5	<0.5	0.08	20
10.04.2021	0.08	<0.5	<0.5	<0.5	0.35	22
23.04.2021	0.08	<0.5	<0.5	<0.5	0.30	20
24.04.2021	0.06	<0.5	<0.5	<0.5	0.21	25
26.04.2021	0.16	<0.5	<0.5	<0.5	0.11	23
27.04.2021	0.06	<0.5	<0.5	<0.5	0.45	24
Limits for Industrial , Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

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Buffer zone ANALYSIS REPORT OF AMBIENT AIR QUALITY

Table No. 2

MES/AQ/FTR/08/00

Name of the Project	: Iron & Steel Plant at Vyasanakere village, Hosapete Taluk, District Ballari State Karnataka					
Name of the Client	: M/s. Sandur Manganese & Iron Ores Limited					
Station at & Code	: A - 2, Vyasankere village					
Duration	: 24 Hrs					
Date of Report	: 07.05.2021					
Reference IS 5182	Report No : MES/SS/ARN/209					
Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
02.04.2021	9	13	54	27	<20	<1
03.04.2021	10	15	40	24	<20	<1
09.04.2021	9	17	33	24	<20	<1
10.04.2021	10	10	41	22	<20	<1
14.04.2021	12	15	51	35	<20	<1
15.04.2021	8	13	47	28	<20	<1
23.04.2021	12	10	56	27	<20	<1
24.04.2021	9	11	51	31	<20	<1
26.04.2021	8	10	48	25	<20	<1
27.04.2021	9	13	42	19	<20	<1
Limits for Industrial , Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
02.04.2021	0.09	<0.5	<0.5	<0.5	0.15	25
03.04.2021	0.11	<0.5	<0.5	<0.5	0.22	21
09.04.2021	0.11	<0.5	<0.5	<0.5	0.36	25
10.04.2021	0.08	<0.5	<0.5	<0.5	0.22	23
14.04.2021	0.08	<0.5	<0.5	<0.5	0.31	21
15.04.2021	0.11	<0.5	<0.5	<0.5	0.26	25
23.04.2021	0.06	<0.5	<0.5	<0.5	0.25	22
24.04.2021	0.06	<0.5	<0.5	<0.5	0.11	23
26.04.2021	0.07	<0.5	<0.5	<0.5	0.08	24
27.04.2021	0.06	<0.5	<0.5	<0.5	0.33	22
Limits for Industrial , Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

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ISO9001:2015
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Buffer zone

Table No. 3

ANALYSIS REPORT OF AMBIENT AIR QUALITY

MES/AQ/FTR/08/00

Name of the Project	: Iron & Steel Plant at Vyasanakere village, Hosapete Taluk, District Ballari State Karnataka					
Name of the Client	: M/s. Sandur Manganese & Iron Ores Limited					
Station at & Code	: A - 3, Kallahalli village					
Duration	: 24 Hrs					
Date of Report	: 07.05.2021					
Reference IS 5182	Report No : MES/SS/ARN/210					
Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
02.04.2021	10	15	50	29	<20	<1
03.04.2021	8	12	50	18	<20	<1
09.04.2021	12	22	45	27	<20	<1
10.04.2021	8	12	40	28	<20	<1
14.04.2021	11	14	37	23	<20	<1
15.04.2021	9	11	53	24	<20	<1
23.04.2021	8	19	48	25	<20	<1
24.04.2021	13	17	38	21	<20	<1
26.04.2021	9	12	56	30	<20	<1
27.04.2021	8	14	50	19	<20	<1
Limits for Industrial , Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
02.04.2021	0.05	<0.5	<0.5	<0.5	0.15	20
03.04.2021	0.15	<0.5	<0.5	<0.5	0.23	25
09.04.2021	0.16	<0.5	<0.5	<0.5	0.21	23
10.04.2021	0.15	<0.5	<0.5	<0.5	0.05	20
14.04.2021	0.05	<0.5	<0.5	<0.5	0.22	21
15.04.2021	0.05	<0.5	<0.5	<0.5	0.26	20
23.04.2021	0.11	<0.5	<0.5	<0.5	0.09	24
24.04.2021	0.06	<0.5	<0.5	<0.5	0.08	25
26.04.2021	0.09	<0.5	<0.5	<0.5	0.06	22
27.04.2021	0.11	<0.5	<0.5	<0.5	0.33	23
Limits for Industrial , Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

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Buffer zone

Table No. 4

ANALYSIS REPORT OF AMBIENT AIR QUALITY

MES/AQ/FTR/08/00

Name of the Project	: Iron & Steel Plant at Vyasanakere village, Hosapete Taluk, District Ballari State Karnataka					
Name of the Client	: M/s. Sandur Manganese & Iron Ores Limited					
Station at & Code	: A - 4, Gunda village					
Duration	: 24 Hrs					
Date of Report	: 12.01.2021					
Reference IS 5182	Report No : MES/WS/ARN/112					
Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
02.04.2021	11	17	60	27	<20	<1
03.04.2021	6	14	43	28	<20	<1
09.04.2021	8	18	48	29	<20	<1
10.04.2021	7	12	45	25	<20	<1
14.04.2021	9	13	55	28	<20	<1
15.04.2021	10	15	45	18	<20	<1
23.04.2021	8	14	39	22	<20	<1
24.04.2021	7	13	55	20	<20	<1
26.04.2021	9	10	40	28	<20	<1
27.04.2021	8	15	43	22	<20	<1
Limits for Industrial , Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
02.04.2021	0.06	<0.5	<0.5	<0.5	0.16	24
03.04.2021	0.12	<0.5	<0.5	<0.5	0.25	<20
09.04.2021	0.11	<0.5	<0.5	<0.5	0.08	22
10.04.2021	0.08	<0.5	<0.5	<0.5	0.11	23
14.04.2021	0.05	<0.5	<0.5	<0.5	0.11	22
15.04.2021	0.08	<0.5	<0.5	<0.5	0.08	20
23.04.2021	0.15	<0.5	<0.5	<0.5	0.32	23
24.04.2021	0.11	<0.5	<0.5	<0.5	0.09	25
26.04.2021	0.05	<0.5	<0.5	<0.5	0.08	22
27.04.2021	0.05	<0.5	<0.5	<0.5	0.15	23
Limits for Industrial , Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

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Table No. 5

Analysis Report of Fugitive Emission


MES/AQ/FTR/08/00

Name of the Project : Iron & Steel Plant at Vyasanakere village, Hosapete Taluk,
District Ballari State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Station at & Code : A - 5, Near Arc Furnace
Duration : 08 Hrs
Month : April, 2021
Date of Report : 07.05.2021
Report No : MES/SS/ARN/212
Reference IS 5182

Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	Lead (Pb), µg/m ³	Carbon Monoxide* (CO), mg/m ³
24.04.2021	11	18	485	0.13	0.33
Permissible limits for Fugitive Emissions as per G.S.R.277E Dated on 31.03.2012	150 8 Hrs	120 8 Hrs	3000 8 Hrs	2.0 8 Hrs	10 1 Hr

Note : * Parameters monitored for period of 1 hr


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Table No. 6

Analysis Report of Fugitive Emission

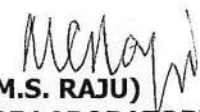
MES/AQ/FTR/08/00

Name of the Project : Iron & Steel Plant at Vysanakere village, Hosapete Taluk,
District Ballari, State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Station at & Code : A - 6, Near Power plant
Duration : 08 Hrs
Month : April, 2021
Date of Report : 07.05.2021
Report No : MES/SS/ARN/213
Reference IS 5182

Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	Lead (Pb), µg/m ³	Carbon Monoxide* (CO), mg/m ³
24.04.2022	7	16	555	0.08	0.21
Permissible limits for Fugitive Emissions as per G.S.R.277E Dated on 31.03.2012	150 8 Hrs	120 8 Hrs	3000 8 Hrs	2.0 8 Hrs	10 1 Hr

Note : * Parameters monitored for period of 1 hr


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Table No. 7

Analysis Report of Fugitive Emission

MES/AQ/FTR/08/00

Name of the Project : Iron & Steel Plant at Vysanakere village, Hosapete Taluk,
District Ballari, State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Station at & Code : A - 7, Near Coal Shed Area
Duration : 08 Hrs
Month : April, 2021
Date of Report : 07.05.2021
Report No : MES/SS/ARN/214
Reference IS 5182

Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	Lead (Pb), µg/m ³	Carbon Monoxide* (CO), mg/m ³
26.04.2021	12	15	569	0.05	0.33
Permissible limits for Fugitive Emissions as per G.S.R.277E Dated on 31.03.2012	150 8 Hrs	120 8 Hrs	3000 8 Hrs	2.0 8 Hrs	10 1 Hr

Note : * Parameters monitored for period of 1 hr

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Table No. 8

Analysis Report of Fugitive Emission


MES/AQ/FTR/08/00

Name of the Project : Iron & Steel Plant at Vysanakere village, Hosapete Taluk,
District Ballari, State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Station at & Code : A - 8, Near Coke Oven plant
Duration : 24 Hrs
Month : April, 2021
Date of Report : 07.05.2021
Report No : MES/SS/ARN/215
Reference IS 5182

Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	Lead (Pb), µg/m ³	Carbon Monoxide* (CO), mg/m ³
26.04.2021	11	16	578	0.11	0.41
Permissible limits for Fugitive Emissions as per G.S.R.277E Dated on 31.03.2012	150 8 Hrs	120 8 Hrs	3000 8 Hrs	2.0 8 Hrs	10 1 Hr

Note : * Parameters monitored for period of 1 hr


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Table No. 9

Analysis Report of Fugitive Emission


MES/AQ/FTR/08/00

Name of the Project : Iron & Steel Plant at Vyasanakere village, Hosapete Taluk,
District Ballari, State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Station at & Code : A - 9, Near Main gate
Duration : 24 Hrs
Month : April, 2021
Date of Report : 07.05.2021
Report No : MES/SS/ARN/216
Reference IS 5182

Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	Lead (Pb), µg/m ³	Carbon Monoxide* (CO), mg/m ³
27.04.2021	10	11	456	0.08	0.25
Permissible limits for Fugitive Emissions as per G.S.R.277E Dated on 31.03.2012	150 8 Hrs	120 8 Hrs	3000 8 Hrs	2.0 8 Hrs	10 1 Hr

Note : * Parameters monitored for period of 1 hr


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Table No. 10

Analysis Report of Fugitive Emission


MES/AQ/FTR/08/00

Name of the Project : Iron & Steel Plant at Vysanakere village, Hosapete Taluk,
District Ballari, State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Station at & Code : A - 10, Iron ore Benefication plant
Duration : 24 Hrs
Month : April, 2021
Date of Report : 07.05.2021
Report No : MES/SS/ARN/217
Reference IS 5182

Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	Lead (Pb), µg/m ³	Carbon Monoxide* (CO), mg/m ³
27.04.2021	10	9	488	0.09	0.42
Permissible limits for Fugitive Emissions as per G.S.R.277E Dated on 31.03.2012	150 8 Hrs	120 8 Hrs	3000 8 Hrs	2.0 8 Hrs	10 1 Hr

Note : * Parameters monitored for period of 1 hr


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Table No. 11

WATER ANALYSIS REPORT

MES/W/FTR/12/00

Name of the Project : Iron & Steel Plant at Vyasanakere village,
Hosapete Taluk, District Ballari, State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Month : April, 2021
Date of sampling : 29.04.2021
Date of Report : 07.05.2021
Report No : MES/SS/WRN/58
Ref:IS : 2296, 1982 Class C Norms (Stream Water Standards)

Sl.No.	Parameters	Method of Testing	Limits For Stream Water Standards	Result		
				SW1	SW2	SW3
i	pH	IS:3025(Part-11)	6.5 to 8.5	8.21	Dry	8.25
ii	Dissolved Oxygen (as O ₂), mg/l, Min	IS:3025(Part-38)	4	5.4		5.4
iii	Biochemical Oxygen Demand (as O ₂), mg/l, Max	IS:3025(Part-44)	3	1.3		1.4
iv	Total Coliform (mpn/100ml), Max	IS:1622	5000	166		200
v	Colour (Hazen Units), Max	IS:3025(Part-4)	300	5		5
vi	Fluoride (as F),mg/l, Max	IS:3025(Part-60)	1.5	<0.1		<0.1
vii	Cadmium (as Cd), mg/l, Max	IS:3025(Part-41)	0.01	<0.002		<0.002
viii	Chloride (as Cl),mg/l, Max	IS:3025(Part-32)	600	52.5		33.0
ix	Chromium (as Cr ⁺⁶), mg/l, Max	IS:3025(Part-52)	0.05	<0.03		<0.03
x	Cyanides (as CN), mg/l, Max	IS:3025(Part-27)	0.05	<0.01		<0.01
xi	Total Dissolved Solids (mg/l), Max	IS:3025(Part-16)	1500	230		172
xii	Selenium (as Se), mg/l, Max	IS:3025(Part-56)	0.05	<0.005		<0.005
xiii	Sulphates as SO ₄ (mg/l), Max	IS:3025(Part-24)	400	37.5		27.7
xiv	Lead (as Pb) mg/l, Max	IS:3025(Part-47)	0.1	<0.005		<0.005
xv	Copper (as Cu),mg/l, Max	IS:3025(Part-42)	1.5	<0.01		<0.01
xvi	Arsenic as As (mg/l), Max	IS:3025(Part-37)	0.2	<0.002		<0.002
xvii	Iron (as Fe),mg/l, MAX	IS:3025(Part-53)	50	<0.05		0.06
xviii	Phenolic compounds (as C ₆ H ₅ OH),mg/l, Max	IS:3025(Part-43)	0.005	<0.001		<0.001
xix	Zinc (as Zn),mg/l, Max	IS:3025(Part-49)	15	<0.005		<0.005
xx	Insecticides, mg/l, Max	APHA 21 st	Absent	NA		NA
xxi	Anionic detergents (as MBAS),mg/l, Max	Annex K of IS 13248	1	<0.1		<0.1
xxii	Oil and grease, mg/l, Max	IS:3025(Part-39)	0.1	<0.01		<0.01
xxiii	Nitrates (as NO ₃),mg/l, Max	IS:3025(Part-34)	50	3.4		3.8
xxiv	Alpha Emitters (µcurie/ml), Max	APHA 21 st	10 ⁻⁹	NA		NA
xxv	Beta Emitters (µcurie/ml), Max	APHA 21 st	10 ⁻⁸	NA		NA

SAMPLE TYPE :

Note : NA - Not Analysed

SW1 - Tungabhadra Reservoir

SW2 - Canal near Vysanakere

SW3 - Dhananayakana kere water

Samples Collected & Analysed by Mineral Engineering Services, Ballari

(M.R. DURGA PRASAD)
GOVT. ANALYST

(M.S. RAJU)
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MINERAL ENGINEERING SERVICES



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ISO9001:2015
OHSAS (ISO 45001:2018)

Table No. 12

WATER ANALYSIS REPORT

MES/WFTR/12/00

Name of the Project : Iron & Steel Plant at Vyasanakere village,
Hosapete Taluk, District Ballari, State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Month : April, 2021
Date of sampling : 29.04.2021
Date of Report : 07.05.2021
Report No : MES/SS/WRN/59
Ref:IS : 2296, 1982 Class C Norms (Stream Water Standards)

Sl.No.	Parameters	Method of Testing	Limits For Stream Water Standards	Result	
				SW4	SW5
i	pH	IS:3025(Part-11)	6.5 to 8.5	8.24	8.14
ii	Dissolved Oxygen (as O ₂), mg/l, Min	IS:3025(Part-38)	4	5.5	5.6
iii	Biochemical Oxygen Demand (as O ₂), mg/l, Max	IS:3025(Part-44)	3	1.4	1.6
iv	Total Coliform (mpn/100ml), Max	IS:1622	5000	160	206
v	Colour (Hazen Units), Max	IS:3025(Part-4)	300	5	5
vi	Fluoride (as F),mg/l, Max	IS:3025(Part-60)	1.5	<0.1	0.17
vii	Cadmium (as Cd), mg/l, Max	IS:3025(Part-41)	0.01	<0.002	<0.002
viii	Chloride (as Cl),mg/l, Max	IS:3025(Part-32)	600	43.9	112.5
ix	Chromium (as Cr ⁺⁶), mg/l, Max	IS:3025(Part-52)	0.05	<0.03	<0.03
x	Cyanides (as CN), mg/l, Max	IS:3025(Part-27)	0.05	<0.01	<0.01
xi	Total Dissolved Solids (mg/l), Max	IS:3025(Part-16)	1500	190	360
xii	Selenium (as Se), mg/l, Max	IS:3025(Part-56)	0.05	<0.005	<0.005
xiii	Sulphates as SO ₄ (mg/l), Max	IS:3025(Part-24)	400	24.8	45.5
xiv	Lead (as Pb) mg/l, Max	IS:3025(Part-47)	0.1	<0.005	<0.005
xv	Copper (as Cu),mg/l, Max	IS:3025(Part-42)	1.5	<0.01	<0.01
xvi	Arsenic as As (mg/l), Max	IS:3025(Part-37)	0.2	<0.002	<0.002
xvii	Iron (as Fe),mg/l, MAX	IS:3025(Part-53)	50	<0.05	<0.05
xviii	Phenolic compounds (as C ₆ H ₅ OH),mg/l, Max	IS:3025(Part-43)	0.005	<0.001	<0.001
xix	Zinc (as Zn),mg/l, Max	IS:3025(Part-49)	15	<0.005	<0.005
xx	Insecticides, mg/l, Max	APHA 21 st	Absent	NA	NA
xxi	Anionic detergents (as MBAS),mg/l, Max	Annex K of IS 13248	1	<0.1	<0.1
xxii	Oil and grease, mg/l, Max	IS:3025(Part-39)	0.1	<0.01	<0.01
xxiii	Nitrates (as NO ₃),mg/l, Max	IS:3025(Part-34)	50	4.8	6.6
xxiv	Alpha Emitters (µcurie/ml), Max	APHA 21 st	10 ⁻⁹	NA	NA
xxv	Beta Emitters (µcurie/ml), Max	APHA 21 st	10 ⁻⁸	NA	NA

SAMPLE TYPE :

Note : NA - Not Analysed

SW4 - Water body near Narayadevara kere

SW5 - Pond near Ayyanahalli

Samples Collected & Analysed by Mineral Engineering Services, Ballari

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ISO9001:2015
OHSAS (ISO 45001:2018)

WATER ANALYSIS REPORT

Table No. 13
MES/W/FTR/13/00

Name of the Project : Iron & Steel Plant at Vyasnakere village,
Hosapete Taluk, District Ballari, State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Month : April, 2021
Date of sampling : 29.04.2021
Date of Report : 07.05.2021
Report No : MES/SS/WRN/60
Ref : IS:10500-2012 Norms (Drinking Water Standards)

Sl. No.	Parameters	Method of Testing	Desirable Limts	Permissible Limts	Result		
					GW1	GW2	GW3
i	Colour (Hazen Units), Max	IS:3025 (Part-4)	5	15	<1	1	1
ii	Odour	IS:3025 (Part-5)	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
iii	pH	IS:3025 (Part-11)	6.5 to 8.5	6.5 - 8.5	8.13	8.07	8.18
iv	Taste	IS:3025 (Part- 8)	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
v	Turbidity, NTU, Max	IS:3025 (Part-10)	1	5	2.5	2.3	1.5
vi	Total Dissolved Solids,mg/l, Max	IS:3025 (Part-16)	500	2000	136	812	1390
vii	Aluminium (as Al), Max	IS:3025 (Part-55)	0.03	0.2	<0.01	<0.01	<0.01
viii	Ammonia (as total Ammonia -N),mg/l, Max	IS:3025 (Part-34)	0.5	0.5	<0.1	<0.1	<0.1
ix	Anionic Detergents (as MBAS),mg/l, Max	Annex K of Is:13428	0.2	1.0	<0.1	<0.1	<0.1
x	Barium (as Ba), mg/l, Max	IS:15302 & APHA 21 st	0.7	0.7	<0.05	<0.05	<0.05
xi	Boron (as B), mg/l, Max	IS:3025 (Part-57)	0.5	1	<0.1	<0.1	<0.1
xii	Calcium (as Ca),mg/l, Max	IS:3025 (Part-40)	75	200	18	120	88.2
xiii	Chloramines (as Cl ₂), mg/l, Max	APHA 21 st	4.0	4.0	NA	NA	NA
xiv	Chloride as Cl (mg/l),mg/l, Max	IS:3025 (Part-32)	250	1000	33	240	465
xv	Copper (as Cu),mg/l, Max	IS:3025 (Part-42)	0.05	1.5	<0.01	<0.01	<0.01
xvi	Fluoride (as F),mg/l, Max	IS:3025 (Part-60)	1	1.5	<0.1	<0.1	0.72
xvii	Residual, Free Chlorine,mg/l, Max	IS:3025 (Part-26)	0.2	1	<0.1	<0.1	<0.1
xviii	Iron (as Fe),mg/l, Max	IS:3025 (Part-53)	1.0	1.0	<0.05	0.05	<0.05
xix	Magnesium (as Mg),mg/l, Max	IS:3025 (Part-46)	30	100	7.8	82.6	73.0
xx	Manganese (as Mn),mg/l, Max	IS:3025 (Part-59)	0.1	0.3	<0.03	<0.03	<0.03
xxi	Mineral Oil,mg/l, Max	Clause 6 of IS 3025 (part -39)	0.5	0.5	<0.01	<0.01	<0.01
xxii	Nitrates (as NO ₃),mg/l, Max	IS:3025 (Part-34)	45	45	4.9	17.7	30.4
xxiii	Phenolics (as C ₆ H ₅ OH),mg/l, Max	IS:3025 (Part-43)	0.001	0.002	<0.001	<0.001	<0.001
xxiv	Selenium (as Se),mg/l, Max	IS:3025 (Part-56)	0.01	0.01	<0.005	<0.005	<0.005
xxv	Silver (as Ag), mg/l, Max	Annex J of Is:13428	0.1	0.1	<0.002	<0.002	<0.002
xxvi	Sulphates (as SO ₄),mg/l, Max	IS:3025 (Part-24)	200	400	4.3	80.2	120.4
xxvii	Sulphide (as H ₂ S) , mg/l, Max	IS:3025 (Part-29)	0.05	0.05	<0.01	<0.01	<0.01
xxviii	Alkalinity (as CaCO ₃) mg/l, Max	IS:3025 (Part-23)	200	600	84	350	450
xxix	Total Hardness (as CaCO ₃),mg/l, Max	IS:3025 (Part-21)	200	600	76	640	520
xxx	Zinc (as Zn),mg/l, Max	IS:3025 (Part-49)	5	15	<0.005	<0.005	<0.005
xxxi	Cadmium (as Cd),mg/l, Max	IS:3025 (Part-41)	0.003	0.003	<0.002	<0.002	<0.002
xxxii	Cyanide (as CN),mg/l, Max	IS:3025 (Part-27)	0.05	0.05	<0.01	<0.01	<0.01
xxxiii	Lead (as Pb),mg/l, Max	IS:3025 (Part-47)	0.01	0.01	<0.005	<0.005	<0.005
xxxiv	Molybdenum (as Mo), mg/l, Max	APHA 21 st	0.07	0.07	NA	NA	NA
xxxv	Mercury (as Hg),mg/l, Max	IS:3025 (Part-48)	0.001	0.001	<0.0005	<0.0005	<0.0005
xxxvi	Nickel (as Ni),mg/l, Max	IS:3025 (Part-54)	0.02	0.02	<0.01	<0.01	<0.01
xxxvii	Pesticides (Total)	APHA 21 st	Absent	0.001	NA	NA	NA
xxxviii	Polychlorinated biphenyls mg/l, Max	APHA 21 st Edition	0.0005	0.0005	NA	NA	NA
xxxix	Polynuclear Aromatic Hydrocarbons (as PAH) mg/l, Max	APHA 21 st Edition	0.0001	0.0001	NA	NA	NA
XL	Arsenic (as As),mg/l, Max	IS:3025 (Part-37)	0.01	0.01	<0.002	<0.002	<0.002
XLi	Chromium (as Cr ⁺⁶),mg/l, Max	IS:3025 (Part-52)	0.05	0.05	<0.03	<0.03	<0.03
XLii	Trihalomethanes,mg/l, Max	APHA 21 st	--	--	NA	NA	NA
XLiii	Radioactive materials,Bq/l,mg/l	APHA 21 st	--	--	NA	NA	NA
XLiv	Total Coliform (/100ml)	IS:1622	Absent	Absent	Absent	Absent	Absent
XLv	E-Coli (cfu/100ml)	IS:1622	Absent	Absent	Absent	Absent	Absent

SAMPLE TYPE GW1 - Ro water at SMIORE Plant Premises, GW2 - Rajapura village bore water, GW3 - Hanumanhalli village bore water
Samples Collected & Analysed by Mineral Engineering Services, Bellary NA - Not Analysed

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ISO9001:2015
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WATER ANALYSIS REPORT

Table No. 14
MES/W/FR/13/00

Name of the Project : Iron & Steel Plant at Vysanakere village,
Hosapete Taluk, District Ballari, State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Month : April, 2021
Date of sampling : 29.04.2021
Date of Report : 07.05.2021
Report No : MES/SS/WRN/61
Ref : IS:10500-2012 Norms (Drinking Water Standards)

Sl. No.	Parameters	Method of Testing	Desirable Limits	Permissible Limits	Result		
					GW4	GW5	GW6
i	Colour (Hazen Units), Max	IS:3025 (Part-4)	5	15	1	<1	1
ii	Odour	IS:3025 (Part-5)	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
iii	pH	IS:3025 (Part-11)	6.5 to 8.5	6.5 - 8.5	8.05	8.25	8.06
iv	Taste	IS:3025 (Part- 8)	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
v	Turbidity,NTU, Max	IS:3025 (Part-10)	1	5	1.7	1.7	2.6
vi	Total Dissolved Solids,mg/l, Max	IS:3025 (Part-16)	500	2000	93	638	770
vii	Aluminium (as Al), Max	IS:3025 (Part-55)	0.03	0.2	<0.01	<0.01	<0.01
viii	Ammonia (as total Ammonia -N),mg/l, Max	IS:3025 (Part-34)	0.5	0.5	<0.1	<0.1	<0.1
ix	Anionic Detergents (as MBAS),mg/l , Max	Annex K of Is:13428	0.2	1.0	<0.1	<0.1	<0.1
x	Barium (as Ba), mg/l, Max	IS:15302 & APHA 21 st	0.7	0.7	<0.05	<0.05	<0.05
xi	Boron (as B), mg/l, Max	IS:3025 (Part-57)	0.5	1	<0.1	<0.1	<0.1
xii	Calcium (as Ca),mg/l, Max	IS:3025 (Part-40)	75	200	96	44	104
xiii	Chloramines (as Cl ₂), mg/l. Max	APHA 21 st	4.0	4.0	NA	NA	NA
xiv	Chloride as Cl (mg/l),mg/l, Max	IS:3025 (Part-32)	250	1000	255	100	185
xv	Copper (as Cu),mg/l, Max	IS:3025 (Part-42)	0.05	1.5	<0.01	<0.01	<0.01
xvi	Fluoride (as F),mg/l, Max	IS:3025 (Part-60)	1	1.5	0.21	1.05	0.18
xvii	Residual, Free Chlorine,mg/l, Max	IS:3025 (Part-26)	0.2	1	<0.1	<0.1	<0.1
xviii	Iron (as Fe),mg/l, Max	IS:3025 (Part-53)	1.0	1.0	0.06	0.09	0.06
xix	Magnesium (as Mg)mg/l, Max	IS:3025 (Part-46)	30	100	75	51.0	80.2
xx	Manganese (as Mn),mg/l, Max	IS:3025 (Part-59)	0.1	0.3	<0.03	<0.03	<0.03
xxi	Mineral Oil,mg/l, Max	Clause 6 of IS 3025 (part -39)	0.5	0.5	<0.01	<0.01	<0.01
xxii	Nitrates (as NO ₃),mg/l, Max	IS:3025 (Part-34)	45	45	32	37	37.4
xxiii	Phenolics (as C ₆ H ₅ OH),mg/l, Max	IS:3025 (Part-43)	0.001	0.002	<0.001	<0.001	<0.001
xxiv	Selenium (as Se),mg/l, Max	IS:3025 (Part-56)	0.01	0.01	<0.005	<0.005	<0.005
xxv	Silver (as Ag), mg/l. Max	Annex J of Is:13428	0.1	0.1	<0.002	<0.002	<0.002
xxvi	Sulphates (as SO ₄),mg/l, Max	IS:3025 (Part-24)	200	400	141	67	102.3
xxvii	Sulphide (as H ₂ S) , mg/l. Max	IS:3025 (Part-29)	0.05	0.05	<0.01	<0.01	<0.01
xxviii	Alkalinity (as CaCO ₃) mg/l, Max	IS:3025 (Part-23)	200	600	280	355	320
xxix	Total Hardness (as CaCO ₃),mg/l, Max	IS:3025 (Part-21)	200	600	550	320	590
xxx	Zinc (as Zn),mg/l, Max	IS:3025 (Part-49)	5	15	<0.005	<0.005	<0.005
xxxi	Cadmium (as Cd),mg/l, Max	IS:3025 (Part-41)	0.003	0.003	<0.002	<0.002	<0.002
xxxii	Cyanide (as CN),mg/l, Max	IS:3025 (Part-27)	0.05	0.05	<0.01	<0.01	<0.01
xxxiii	Lead (as Pb),mg/l, Max	IS:3025 (Part-47)	0.01	0.01	<0.005	<0.005	<0.005
xxxiv	Molybdenum (as Mo), mg/l, Max	APHA 21 st	0.07	0.07	NA	NA	NA
xxxv	Mercury (as Hg),mg/l, Max	IS:3025 (Part-48)	0.001	0.001	<0.0005	<0.0005	<0.0005
xxxvi	Nickel (as Ni),mg/l, Max	IS:3025 (Part-54)	0.02	0.02	<0.01	<0.01	<0.01
xxxvii	Pesticides (Total)	APHA 21 st	Absent	0.001	NA	NA	NA
xxxviii	Polychlorinated biphenyls mg/l, Max	APHA 21 st Edition	0.0005	0.0005	NA	NA	NA
xxxix	Polynuclear Aromatic Hydrocarbons (as PAH),mg/l, Max	APHA 21 st Edition	0.0001	0.0001	NA	NA	NA
XL	Arsenic (as As),mg/l, Max	IS:3025 (Part-37)	0.01	0.01	<0.002	<0.002	<0.002
XLi	Chromium (as Cr ⁺⁶),mg/l, Max	IS:3025 (Part-52)	0.05	0.05	<0.03	<0.03	<0.03
XLii	Trihalomethanes,mg/l, Max	APHA 21 st	--	--	NA	NA	NA
XLiii	Radioactive materials,Bq/l,mg/l	APHA 21 st	--	--	NA	NA	NA
XLiv	Total Coliform (/100ml)	IS:1622	Absent	Absent	Absent	Absent	Absent
XLv	E-Coli (cfu/100ml)	IS:1622	Absent	Absent	Absent	Absent	Absent

SAMPLE TYPE : GW4 - Munirabad bore water, GW5 - Vysanakere village bore water, GW6 - Venkatagiri village bore water
Samples Collected & Analysed by Mineral Engineering Services, Bellary NA - Not Analysed

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ISO9001:2015
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WATER ANALYSIS REPORT

Table No. 15
MES/W/FTR/13/00

Name of the Project : Iron & Steel Plant at Vysanakere village,
Hosapete Taluk, District Ballari, State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Month : April, 2021
Date of sampling : 29.04.2021
Date of Report : 07.05.2021
Report No : MES/SS/WRN/62
Ref : IS:10500-2012 Norms (Drinking Water Standards)

Sl. No.	Parameters	Method of Testing	Desirable Limits	Permissible Limits	Result	
					GW7	GW8
i	Colour (Hazen Units), Max	IS:3025 (Part-4)	5	15	1	1
ii	Odour	IS:3025 (Part-5)	Agreeable	Agreeable	Agreeable	Agreeable
iii	pH	IS:3025 (Part-11)	6.5 to 8.5	6.5 - 8.5	8.02	8.11
iv	Taste	IS:3025 (Part- 8)	Agreeable	Agreeable	Agreeable	Agreeable
v	Turbidity,NTU, Max	IS:3025 (Part-10)	1	5	4	2.3
vi	Total Dissolved Solids,mg/l, Max	IS:3025 (Part-16)	500	2000	870	812
vii	Aluminium (as Al), Max	IS:3025 (Part-55)	0.03	0.2	<0.01	<0.01
viii	Ammonia (as total Ammonia -N),mg/l, Max	IS:3025 (Part-34)	0.5	0.5	<0.1	<0.1
ix	Anionic Detergents (as MBAS),mg/l , Max	Annex K of Is:13428	0.2	1.0	<0.1	<0.1
x	Barium (as Ba), mg/l, Max	IS:15302 & APHA 21 st	0.7	0.7	<0.05	<0.05
xi	Boron (as B), mg/l, Max	IS:3025 (Part-57)	0.5	1	<0.1	<0.1
xii	Calcium (as Ca),mg/l, Max	IS:3025 (Part-40)	75	200	108	80
xiii	Chloramines (as Cl ₂), mg/l, Max	APHA 21 st	4.0	4.0	NA	NA
xiv	Chloride as Cl (mg/l),mg/l, Max	IS:3025 (Part-32)	250	1000	225	245
xv	Copper (as Cu),mg/l, Max	IS:3025 (Part-42)	0.05	1.5	<0.01	<0.01
xvi	Fluoride (as F),mg/l, Max	IS:3025 (Part-60)	1	1.5	0.15	0.60
xvii	Residual, Free Chlorine,mg/l, Max	IS:3025 (Part-26)	0.2	1	<0.1	<0.1
xviii	Iron (as Fe),mg/l, Max	IS:3025 (Part-53)	1.0	1.0	<0.05	0.08
xix	Magnesium (as Mg)mg/l, Max	IS:3025 (Part-46)	30	100	88	68.1
xx	Manganese (as Mn),mg/l, Max	IS:3025 (Part-59)	0.1	0.3	<0.03	<0.03
xxi	Mineral Oil,mg/l, Max	Clause 6 of IS 3025 (part -39)	0.5	0.5	<0.01	<0.01
xxii	Nitrates (as NO ₃),mg/l, Max	IS:3025 (Part-34)	45	45	32	34.2
xxiii	Phenolics (as C ₆ H ₅ OH),mg/l, Max	IS:3025 (Part-43)	0.001	0.002	<0.001	<0.001
xxiv	Selenium (as Se),mg/l, Max	IS:3025 (Part-56)	0.01	0.01	<0.005	<0.005
xxv	Silver (as Ag), mg/l, Max	Annex J of Is:13428	0.1	0.1	<0.002	<0.002
xxvi	Sulphates (as SO ₄),mg/l, Max	IS:3025 (Part-24)	200	400	130	117.2
xxvii	Sulphide (as H ₂ S) , mg/l, Max	IS:3025 (Part-29)	0.05	0.05	<0.01	<0.01
xxviii	Alkalinity (as CaCO ₃) mg/l, Max	IS:3025 (Part-23)	200	600	320	240
xxix	Total Hardness (as CaCO ₃),mg/l, Max	IS:3025 (Part-21)	200	600	630	480
xxx	Zinc (as Zn),mg/l, Max	IS:3025 (Part-49)	5	15	<0.005	<0.005
xxxi	Cadmium (as Cd),mg/l, Max	IS:3025 (Part-41)	0.003	0.003	<0.002	<0.002
xxxii	Cyanide (as CN),mg/l, Max	IS:3025 (Part-27)	0.05	0.05	<0.01	<0.01
xxxiii	Lead (as Pb),mg/l, Max	IS:3025 (Part-47)	0.01	0.01	<0.005	<0.005
xxxiv	Molybdenum (as Mo), mg/l, Max	APHA 21 st	0.07	0.07	NA	NA
xxxv	Mercury (as Hg),mg/l, Max	IS:3025 (Part-48)	0.001	0.001	<0.0005	<0.0005
xxxvi	Nickel (as Ni),mg/l, Max	IS:3025 (Part-54)	0.02	0.02	<0.01	<0.01
xxxvii	Pesticides (Total)	APHA 21 st	Absent	0.001	NA	NA
xxxviii	Polychlorinated biphenyls mg/l, Max	APHA 21 st Edition	0.0005	0.0005	NA	NA
xxxix	Polynuclear Aromatic Hydrocarbons (as PAH),mg/l, Max	APHA 21 st Edition	0.0001	0.0001	NA	NA
XL	Arsenic (as As),mg/l, Max	IS:3025 (Part-37)	0.01	0.01	<0.002	<0.002
XLi	Chromium (as Cr ⁺⁶),mg/l, Max	IS:3025 (Part-52)	0.05	0.05	<0.03	<0.03
XLii	Trihalomethanes,mg/l, Max	APHA 21 st	--	--	NA	NA
XLiii	Radioactive materials,Bq/l,mg/l	APHA 21 st	--	--	NA	NA
XLiv	Total Coliform (/100ml)	IS:1622	Absent	Absent	Absent	Absent
XLv	E-Coli (cfu/100ml)	IS:1622	Absent	Absent	Absent	Absent

SAMPLE TYPE : GW7 - Hosapete bore water, GW8 - Ramgad Reserve forest bore water

Samples Collected & Analysed by Mineral Engineering Services, Bellary NA - Not Analysed

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Table No. 16

AMBIENT NOISE LEVEL DATA

MES/NOISE/FR/02/00

Name of the Project		: Iron & Steel Plant at Vyasanakere village, Hosapete Taluk, District Ballari, State Karnataka					
Name of the Client		: M/s. Sandur Manganese & Iron Ores Limited					
Date of monitoring		: 26.04.2021					
Date of Report		: 07.05.2021					
Report No		: MES/SS/NRN/13					
Code No.	Monitoring stations	Day			Night		
		L _{min}	L _{eq}	L _{max}	L _{min}	L _{eq}	L _{max}
Buffer zone							
N1	Vyasanakere village	37.0	52.8	59.1	34.5	43.4	49.5
N2	Kallahalli village	49.9	54.8	58.1	35.0	42.3	47.0
N3	Gunda village	36.5	49.8	55.3	34.6	41.9	44.5
N4	Hanumanhalli village	37.5	50.6	55.3	34.0	44.1	47.6
N5	Rajapura village	40.8	54.4	61.0	36.0	41.7	46.8
N6	Venkatagiri village	45.5	53.9	59.3	35.0	42.3	48.0
N7	Ramgad village	38.0	50.6	57.5	34.8	41.1	46.5
Corezone							
N8	Core zone near SMIORE Colony	40.0	55.3	65.0	36.0	49.0	54.5
Permissible Limits of Ambient Noise Levels as per CPCB Guidelines							
		Leq. Limit dB(A)					
		Day		Night			
Industrial areas		75		70			
Commercial area		65		55			
Residential area		55		45			

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Table No. 17

FUGITIVE NOISE LEVEL DATA

MES/NOISE/FR/02/00


Name of the Project	: Iron & Steel Plant at Vyasanakere village, Hosapete Taluk, District Ballari, State Karnataka
Name of the Client	: M/s. Sandur Manganese & Iron Ores Limited
Date of monitoring	: 26.04.2021
Date of Report	: 07.05.2021
Report No	: MES/SS/NRN/14

Code No.	Monitoring stations	Day			Remarks
		L _{min}	L _{eq}	L _{max}	
Corezone					
1	Near Coal Crusher Area.	52.1	54.7	61.0	During operation
2	Near Coke Cutting Area	57.5	61.3	68.1	During operation
3	Near Coke Screening Area	55.0	65.9	71.3	During operation
4	Near WHRB -1 Plant Area	41.2	45.4	47.4	During operation
5	Near Arc Furance	71.1	72.1	73.3	---
6	Near Power Plant	53.3	57.2	59.0	During operation
7	Near Coal Shed Area	47.7	53.1	63.1	During operation
8	Near Coke Oven plant	60.2	62.1	64.3	During operation
9	Near DG Area	55.6	60.8	63.1	Monitoring done at 1mts distance from 750KVA DG

Permissible limits as per ILO Code of Practice

For Unprotected ear - 8 hrs working shift
Warning limit - 85 dB(A)
Danger limit - 90 dB(A)
Worker not to be exposed for more than 115 dB(A)
With ear protection -
130 dB(A) 'Impulse' or 120 dB(A) 'Fast'
No entry when noise level exceeds 140 dB(A)


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Table No. 18


STACK MONITORING REPORT

MES/STK/FTR/03/00

Name of the Project : Iron & Steel Plant at Vysanakere village, Hosapete Taluk,
District Ballari State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Location : Coke Screening
Stack height : 19 m
Stack diameter : 0.7 m
Date of Monitoring : 09.04.2021
Date of Report : 07.05.2021
Report No : MES/SS/STRN/11

SI No	Parameters	IS methods	Result	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012
1	Stack Temperature (°C)	IS 11255 (Part -3)	47	--
2	Velocity (m/sec)	IS 11255 (Part -3)	14.73	--
3	Quantity of Gas flow (Nm ³ /hr)	IS 11255 (Part -3)	17684	--
4	Particulate Matter (PM) (mg/Nm ³)	IS 11255 (Part -1)	40	50


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Table No. 19


STACK MONITORING REPORT

MES/STK/FTR/03/00

Name of the Project : Iron & Steel Plant at Vysanakere village, Hosapete Taluk,
District Ballari State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Location : Coke Cutter
Stack height : 9 m
Stack diameter : 0.7 m
Date of Monitoring : 09.04.2021
Date of Report : 07.05.2021
Report No : MES/SS/STRN/12

SI No	Parameters	IS methods	Result	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012
1	Stack Temperature (°C)	IS 11255 (Part -3)	39	--
2	Velocity (m/sec)	IS 11255 (Part -3)	6.34	--
3	Quantity of Gas flow (Nm ³ /hr)	IS 11255 (Part -3)	7802	--
4	Particulate Matter (PM) (mg/Nm ³)	IS 11255 (Part -1)	35	50


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Table No. 20

STACK MONITORING REPORT

MES/STK/FTR/03/00

Name of the Project : Iron & Steel Plant at Vysanakere village, Hosapete Taluk,
District Ballari State Karnataka

Name of the Client : M/s. Sandur Manganese & Iron Ores Limited

Location : Coal Crushing

Stack height : 9.5 m

Stack diameter : 0.75 m


Date of Monitoring : 09.04.2021

Date of Report : 07.05.2021

Report No : MES/SS/STRN/13

SI No	Parameters	IS methods	Result	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012
3	Stack Temperature (°C)	IS 11255 (Part -3)	42	--
4	Velocity (m/sec)	IS 11255 (Part -3)	10.82	--
5	Quantity of Gas flow (Nm ³ /hr)	IS 11255 (Part -3)	15142	--
8	Particulate Matter (PM) (mg/Nm ³)	IS 11255 (Part -1)	37	50


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Table No. 21

STACK MONITORING REPORT

MES/STK/FTR/03/00

Name of the Project : Iron & Steel Plant at Vyasanakere village, Hosapete Taluk,
District Ballari State Karnataka

Name of the Client : M/s. Sandur Manganese & Iron Ores Limited

Location : DG 750 KVA

Stack height : 15 m

Stack diameter : 0.3 m


Date of Monitoring : 10.04.2021

Date of Report : 07.05.2021

Report No : MES/SS/STRN/14

SI No	Parameters	IS methods	Result	Tolerance Limits Ref -G.S.R771(E) dated 11.12.2013
3	Temperature ($^{\circ}$ C)	IS 11255 (Part -3)	162	--
4	Velocity (m/sec)	IS 11255 (Part -3)	7.83	--
5	Quantity of Gas flow (Nm ³ /hr)	IS 11255 (Part -3)	512	--
6	Particulate Matter (g/Kw- hr)	IS 11255 (Part -1)	0.109	<0.2
7	CO (g/Kw-hr)	flue gas analyser	0.10	<3.5
8	Nox +HC (g/Kw-hr)	flue gas analyser	0.16	<4.0


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Table No. 22

STACK MONITORING REPORT

MES/STK/FTR/03/00

Name of the Project : Iron & Steel Plant at Vyasanakere village, Hosapete Taluk,
District Ballari State Karnataka

Name of the Client : M/s. Sandur Manganese & Iron Ores Limited

Location : Coke Oven Battery (Passes through WHRB-1)

Stack height : 60 m

Stack diameter : 3.4 m


Date of Monitoring : 10.04.2021

Date of Report : 07.05.2021

Report No : MES/SS/STRN/15

SI No	Parameters	IS methods	Result	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012
1	Stack Temperature (°C)	IS 11255 (Part -3)	155	--
2	Velocity (m/sec)	IS 11255 (Part -3)	6.00	--
3	Quantity of Gas flow (Nm ³ /hr)	IS 11255 (Part -3)	126957	--
4	Sulphur Dioxide (SO ₂), mg/Nm ³	IS 11255 (Part -2)	58.15	800
5	Nitrogen Dioxide (NO ₂), mg/Nm ³	IS 11255 (Part -7)	25.63	500
6	Particulate Matter (PM) (mg/Nm ³)	IS 11255 (Part -1)	22	50


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ENVIRONMENTAL MONITORING REPORT

May, 2021

**Project : Iron & Steel Plant
at
Vysanakere village,
Hosapete Taluk,
Ballari District, Karnataka.**

**M/s. Sandur Manganese & Iron Ores Limited
Sandur,
Ballari District, Karnataka**

CONSULTANT

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Core zone

Table No. 1

ANALYSIS REPORT OF AMBIENT AIR QUALITY

MES/AQ/FTR/08/00

Name of the Project : Iron & Steel Plant at Vyasanakere village, Hosapete Taluk,
District Ballari State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Station at & Code : A - 1, Core zone near SMIORE Colony
Duration : 24 Hrs
Date of Report : 04.06.2021
Reference IS 5182 Report No : MES/SS/ARN/272

Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
07.05.2021	11	12	63	33	<20	<1
08.05.2021	9	11	45	26	<20	<1
10.05.2021	12	16	52	26	<20	<1
11.05.2021	14	11	55	29	<20	<1
21.05.2021	11	14	60	32	<20	<1
22.05.2021	13	18	58	28	<20	<1
24.05.2021	10	15	44	25	<20	<1
25.05.2021	9	11	50	27	<20	<1
Limits for Industrial , Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
07.05.2021	0.08	<0.5	<0.5	<0.5	0.36	25
08.05.2021	0.13	<0.5	<0.5	<0.5	0.22	27
10.05.2021	0.11	<0.5	<0.5	<0.5	0.06	26
11.05.2021	0.08	<0.5	<0.5	<0.5	0.11	23
21.05.2021	0.08	<0.5	<0.5	<0.5	0.08	24
22.05.2021	0.11	<0.5	<0.5	<0.5	0.41	25
24.05.2021	0.06	<0.5	<0.5	<0.5	0.35	21
25.05.2021	0.12	<0.5	<0.5	<0.5	0.21	22
Limits for Industrial , Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

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Buffer zone ANALYSIS REPORT OF AMBIENT AIR QUALITY

Table No. 2

MES/AQ/FTR/08/00

Name of the Project : Iron & Steel Plant at Vyasankere village, Hosapete Taluk,
District Ballari State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Station at & Code : A - 2, Vyasankere village
Duration : 24 Hrs
Date of Report : 04.06.2021
Reference IS 5182 Report No : MES/SS/ARN/273

Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
07.05.2021	9	12	55	29	<20	<1
08.05.2021	10	11	48	25	<20	<1
10.05.2021	7	9	56	29	<20	<1
11.05.2021	11	14	51	26	<20	<1
21.05.2021	9	11	38	20	<20	<1
22.05.2021	12	18	46	25	<20	<1
24.05.2021	11	15	52	27	<20	<1
25.05.2021	10	13	40	24	<20	<1
Limits for Industrial , Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
07.05.2021	0.08	<0.5	<0.5	<0.5	0.45	0.11
08.05.2021	0.06	<0.5	<0.5	<0.5	0.11	0.33
10.05.2021	0.13	<0.5	<0.5	<0.5	0.20	0.15
11.05.2021	0.05	<0.5	<0.5	<0.5	0.17	0.05
21.05.2021	0.11	<0.5	<0.5	<0.5	0.15	0.16
22.05.2021	0.08	<0.5	<0.5	<0.5	0.22	0.21
24.05.2021	0.13	<0.5	<0.5	<0.5	0.11	0.11
25.05.2021	0.04	<0.5	<0.5	<0.5	0.33	0.08
Limits for Industrial , Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

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Buffer zone

Table No. 3

ANALYSIS REPORT OF AMBIENT AIR QUALITY

MES/AQ/FTR/08/00

Name of the Project : Iron & Steel Plant at Vyasanakere village, Hosapete Taluk,
District Ballari State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Station at & Code : A - 3, Kallahalli village
Duration : 24 Hrs
Date of Report : 04.06.2021
Reference IS 5182 Report No : MES/SS/ARN/274

Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
07.05.2021	9	11	44	25	<20	<1
08.05.2021	9	12	50	26	<20	<1
10.05.2021	7	10	44	24	<20	<1
11.05.2021	10	11	38	18	<20	<1
21.05.2021	7	9	49	23	<20	<1
22.05.2021	7	11	33	18	<20	<1
24.05.2021	6	9	54	27	<20	<1
25.05.2021	9	10	44	22	<20	<1
Limits for Industrial , Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
07.05.2021	0.15	<0.5	<0.5	<0.5	0.05	22
08.05.2021	0.05	<0.5	<0.5	<0.5	0.11	20
10.05.2021	0.18	<0.5	<0.5	<0.5	0.21	21
11.05.2021	0.11	<0.5	<0.5	<0.5	0.06	23
21.05.2021	0.06	<0.5	<0.5	<0.5	0.11	25
22.05.2021	0.05	<0.5	<0.5	<0.5	0.25	21
24.05.2021	0.13	<0.5	<0.5	<0.5	0.06	22
25.05.2021	0.07	<0.5	<0.5	<0.5	0.35	23
Limits for Industrial , Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

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OHSAS (ISO 45001:2018)

Buffer zone ANALYSIS REPORT OF AMBIENT AIR QUALITY

Table No. 4

MES/AQ/FTR/08/00

Name of the Project : Iron & Steel Plant at Vyasanakere village, Hosapete Taluk,
District Ballari State Karnataka

Name of the Client : M/s. Sandur Manganese & Iron Ores Limited

Station at & Code : A - 4, Gunda village

Duration : 24 Hrs

Date of Report : 04.06.2021

Reference IS 5182 Report No : MES/SS/ARN/275

Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
07.05.2021	8	12	49	32	<20	<1
08.05.2021	9	15	57	26	<20	<1
10.05.2021	13	17	46	25	<20	<1
11.05.2021	15	18	49	26	<20	<1
21.05.2021	9	16	38	20	<20	<1
22.05.2021	7	10	32	19	<20	<1
24.05.2021	8	17	52	29	<20	<1
25.05.2021	6	12	44	24	<20	<1
Limits for Industrial , Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
07.05.2021	0.08	<0.5	<0.5	<0.5	0.15	24
08.05.2021	0.09	<0.5	<0.5	<0.5	0.08	22
10.05.2021	0.11	<0.5	<0.5	<0.5	0.09	24
11.05.2021	0.18	<0.5	<0.5	<0.5	0.09	28
21.05.2021	0.22	<0.5	<0.5	<0.5	0.38	21
22.05.2021	0.41	<0.5	<0.5	<0.5	0.22	<20
24.05.2021	0.25	<0.5	<0.5	<0.5	0.28	22
25.05.2021	0.18	<0.5	<0.5	<0.5	0.35	23
Limits for Industrial , Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

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OHSAS (ISO 45001:2018)

Table No. 5

STACK MONITORING REPORT

MES/STK/FTR/03/00

Name of the Project : Iron & Steel Plant at Vysanakere village, Hosapete Taluk,
District Ballari State Karnataka

Name of the Client : M/s. Sandur Manganese & Iron Ores Limited

Location : Coke Screening

Stack height : 19 m

Stack diameter : 0.7 m


Date of Monitoring : 07.05.2021

Date of Report : 04.06.2021

Report No : MES/SS/STRN/31

SI No	Parameters	IS methods	Result	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012
1	Stack Temperature (°C)	IS 11255 (Part -3)	47	--
2	Velocity (m/sec)	IS 11255 (Part -3)	12.56	--
3	Quantity of Gas flow (Nm ³ /hr)	IS 11255 (Part -3)	15081	--
4	Particulate Matter (PM) (mg/Nm ³)	IS 11255 (Part -1)	36	50


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Table No. 6

STACK MONITORING REPORT

MES/STK/FTR/03/00

Name of the Project : Iron & Steel Plant at Vysanakere village, Hosapete Taluk,
District Ballari State Karnataka

Name of the Client : M/s. Sandur Manganese & Iron Ores Limited

Location : Coke Cutter

Stack height : 9 m

Stack diameter : 0.7 m

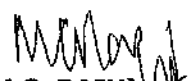
Date of Monitoring : 07.05.2021

Date of Report : 04.06.2021

Report No : MES/SS/STRN/32

SI No	Parameters	IS methods	Result	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012
1	Stack Temperature (°C)	IS 11255 (Part -3)	39	--
2	Velocity (m/sec)	IS 11255 (Part -3)	7	--
3	Quantity of Gas flow (Nm ³ /hr)	IS 11255 (Part -3)	8623	--
4	Particulate Matter (PM) (mg/Nm ³)	IS 11255 (Part -1)	41	50


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Table No. 7

STACK MONITORING REPORT

MES/STK/FTR/03/00

Name of the Project : Iron & Steel Plant at Vyasanakere village, Hosapete Taluk,
District Ballari State Karnataka

Name of the Client : M/s. Sandur Manganese & Iron Ores Limited

Location : Coal Crushing

Stack height : 9.5 m

Stack diameter : 0.75 m

Date of Monitoring : 07.05.2021

Date of Report : 04.06.2021

Report No : MES/SS/STRN/33

SI No	Parameters	IS methods	Result	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012
3	Stack Temperature (°C)	IS 11255 (Part -3)	42	--
4	Velocity (m/sec)	IS 11255 (Part -3)	10.66	--
5	Quantity of Gas flow (Nm ³ /hr)	IS 11255 (Part -3)	41921	--
8	Particulate Matter (PM) (mg/Nm ³)	IS 11255 (Part -1)	39	50


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Table No. 8

STACK MONITORING REPORT

MES/STK/FTR/03/00

Name of the Project : Iron & Steel Plant at Vysanakere village, Hosapete Taluk,
District Ballari State Karnataka

Name of the Client : M/s. Sandur Manganese & Iron Ores Limited

Location : DG 750 KVA

Stack height : 15 m

Stack diameter : 0.3 m

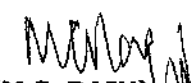
Date of Monitoring : 08.05.2021

Date of Report : 04.06.2021

Report No : MES/SS/STRN/34

Sl No	Parameters	IS methods	Result	Tolerance Limits Ref -G.S.R771(E) dated 11.12.2013
3	Temperature ($^{\circ}$ C)	IS 11255 (Part -3)	188	--
4	Velocity (m/sec)	IS 11255 (Part -3)	9.07	--
5	Quantity of Gas flow (Nm ³ /hr)	IS 11255 (Part -3)	87	--
6	Particulate Matter (g/Kw- hr)	IS 11255 (Part -1)	645	<0.2
7	CO (g/Kw-hr)	flue gas analyser	0.1	<3.5
8	Nox +HC (g/Kw-hr)	flue gas analyser	0.19	<4.0


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Table No. 9


STACK MONITORING REPORT

MES/STK/FTR/03/00

Name of the Project	: Iron & Steel Plant at Vysanakere village, Hosapete Taluk, District Ballari State Karnataka
Name of the Client	: M/s. Sandur Manganese & Iron Ores Limited
Location	: Coke Oven Battery (Passes through WHRB-1)
Stack height	: 60 m
Stack diameter	: 3.4 m
Date of Monitoring	: 08.05.2021
Date of Report	: 04.06.2021
Report No	: MES/SS/STRN/35

SI No	Parameters	IS methods	Result	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012
1	Stack Temperature (°C)	IS 11255 (Part -3)	152	--
2	Velocity (m/sec)	IS 11255 (Part -3)	5.67	--
3	Quantity of Gas flow (Nm ³ /hr)	IS 11255 (Part -3)	120804	--
4	Sulphur Dioxide (SO ₂), mg/Nm ³	IS 11255 (Part -2)	45.36	800
5	Nitrogen Dioxide (NO ₂), mg/Nm ³	IS 11255 (Part -7)	119.00	500
6	Particulate Matter (PM) (mg/Nm ³)	IS 11255 (Part -1)	30	50


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Table No. 10


STACK MONITORING REPORT

MES/STK/FTR/03/00

Name of the Project	: Iron & Steel Plant at Vyasanakere village, Hosapete Taluk, District Ballari State Karnataka
Name of the Client	: M/s. Sandur Manganese & Iron Ores Limited
Location	: Coke Oven Battery (Passes through WHRB-11)
Stack height	: 60 m
Stack diameter	: 3.4 m
Date of Monitoring	: 08.05.2021
Date of Report	: 04.06.2021
Report No	: MES/SS/STRN/36

SI No	Parameters	IS methods	Result	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012
1	Stack Temperature (°C)	IS 11255 (Part -3)	144	--
2	Velocity (m/sec)	IS 11255 (Part -3)	5.81	--
3	Quantity of Gas flow (Nm ³ /hr)	IS 11255 (Part -3)	126238	--
4	Sulphur Dioxide (SO ₂), mg/Nm ³	IS 11255 (Part -2)	60	800
5	Nitrogen Dioxide (NO ₂), mg/Nm ³	IS 11255 (Part -7)	136	500
6	Particulate Matter (PM) (mg/Nm ³)	IS 11255 (Part -1)	33	50


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Table No. 11

STACK MONITORING REPORT

MES/STK/FTR/03/00

Name of the Project : Iron & Steel Plant at Vysanakere village,
Hosapete Taluk, District Ballari State Karnataka

Name of the Client : M/S. Sandur Manganese & Iron Ores Ltd.
(Metal & Ferro Alloys Plant)

Location : Ferro Alloy Arc Furnace Plant

Stack height : 35 m

Stack diameter : 2.5 m

Date of Monitoring : 08.05.2021

Date of Report : 04.06.201

Report No : MES/SS/STRN/37

SI No	Parameters	IS methods	Result
1	Stack Temperature (°C)	IS 11255 (Part -3)	155
2	Velocity (m/sec)	IS 11255 (Part -3)	13.38
3	Quantity of Gas flow (Nm ³ /hr)	IS 11255 (Part -3)	153202
6	Particulate Matter (PM) (mg/Nm ³)	IS 11255 (Part -1)	42


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ENVIRONMENTAL MONITORING REPORT

June, 2021)

**Project : Iron & Steel Plant
at
Vysanakere village,
Hosapete Taluk,
Ballari District, Karnataka.**

**M/s. Sandur Manganese & Iron Ores Limited
Sandur,
Ballari District, Karnataka**

CONSULTANT

MINERAL ENGINEERING SERVICES

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LIST OF TABLES

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Core zone TEST REPORT OF AMBIENT AIR QUALITY

Table No. 1

MES/AQ/TR/06/00

Name of the Project	: Iron & Steel Plant at Vyasanakere village, Hosapete Taluk, District Ballari State Karnataka					
Name of the Client	: M/s. Sandur Manganese & Iron Ores Limited					
Station at & Code	: A - 1, Core zone near SMIORE Colony					
Duration	: 24 Hrs					
Date of Report	: 07.07.2021					
Reference IS 5182	Report No : MES/MS/ARN/34					
Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
04.06.2021	13	18	43	21	<20	<1
05.06.2021	10	16	31	19	<20	<1
07.06.2021	8	17	45	22	<20	<1
08.06.2021	5	9	31	17	<20	<1
18.06.2021	12	15	44	23	<20	<1
19.06.2021	9	13	36	19	<20	<1
21.06.2021	12	12	47	23	<20	<1
22.06.2021	10	11	50	24	<20	<1
28.06.2021	8	12	33	22	<20	<1
29.06.2021	6	13	49	26	<20	<1
Limits for Industrial, Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
04.06.2021	0.15	<0.5	<0.5	<0.5	0.14	22
05.06.2021	0.07	<0.5	<0.5	<0.5	0.16	23
07.06.2021	0.08	<0.5	<0.5	<0.5	0.05	20
08.06.2021	0.07	<0.5	<0.5	<0.5	0.16	23
18.06.2021	0.15	<0.5	<0.5	<0.5	0.12	22
21.06.2021	0.09	<0.5	<0.5	<0.5	0.15	22
22.06.2021	0.15	<0.5	<0.5	<0.5	0.23	20
28.06.2021	0.13	<0.5	<0.5	<0.5	0.30	22
29.06.2021	0.10	<0.5	<0.5	<0.5	0.11	<20
Limits for Industrial, Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

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Buffer zone

Table No. 2

TEST REPORT OF AMBIENT AIR QUALITY

MES/AQ/TR/06/00

Name of the Project : Iron & Steel Plant at Vyasankere village, Hosapete Taluk,
District Ballari State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Station at & Code : A - 2, Vyasankere village
Duration : 24 Hrs
Date of Report : 07.07.2021
Reference IS 5182 Report No : MES/MS/ARN/35

Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
04.06.2021	9	14	50	27	<20	<1
05.06.2021	8	10	42	26	<20	<1
07.06.2021	7	11	43	23	<20	<1
08.06.2021	7	12	40	22	<20	<1
18.06.2021	12	13	48	22	<20	<1
19.06.2021	8	11	33	18	<20	<1
21.06.2021	7	10	27	20	<20	<1
22.06.2021	9	11	46	19	<20	<1
28.06.2021	11	12	53	19	<20	<1
29.06.2021	10	11	44	18	<20	<1
Limits for Industrial , Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
04.06.2021	0.05	<0.5	<0.5	<0.5	0.20	21
05.06.2021	0.08	<0.5	<0.5	<0.5	0.13	20
07.06.2021	0.11	<0.5	<0.5	<0.5	0.19	22
08.06.2021	0.07	<0.5	<0.5	<0.5	0.21	23
18.06.2021	0.11	<0.5	<0.5	<0.5	0.22	26
19.06.2021	0.05	<0.5	<0.5	<0.5	0.14	22
21.06.2021	0.07	<0.5	<0.5	<0.5	0.16	27
22.06.2021	0.05	<0.5	<0.5	<0.5	0.12	20
28.06.2021	0.15	<0.5	<0.5	<0.5	0.15	21
29.06.2021	0.09	<0.5	<0.5	<0.5	0.22	21
Limits for Industrial , Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

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Buffer zone

Table No. 3

TEST REPORT OF AMBIENT AIR QUALITY

MES/AQ/TR/06/00

Name of the Project	: Iron & Steel Plant at Vyasanakere village, Hosapete Taluk, District Ballari State Karnataka					
Name of the Client	: M/s. Sandur Manganese & Iron Ores Limited					
Station at & Code	: A - 3, Kallahalli village					
Duration	: 24 Hrs					
Date of Report	: 07.07.2021					
Reference IS 5182	Report No : MES/MS/ARN/36					
Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
04.06.2021	11	12	53	22	<20	<1
05.06.2021	5	9	62	37	<20	<1
07.06.2021	11	12	54	18	<20	<1
08.06.2021	9	11	63	37	<20	<1
18.06.2021	10	15	49	29	<20	<1
19.06.2021	7	10	46	25	<20	<1
21.06.2021	11	14	68	35	<20	<1
22.06.2021	9	11	57	27	<20	<1
28.06.2021	10	13	45	24	<20	<1
29.06.2021	12	16	38	29	<20	<1
Limits for Industrial, Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
04.06.2021	0.07	<0.5	<0.5	<0.5	0.23	22
05.06.2021	0.11	<0.5	<0.5	<0.5	0.16	23
07.06.2021	<0.05	<0.5	<0.5	<0.5	0.17	22
08.06.2021	0.07	<0.5	<0.5	<0.5	0.20	20
18.06.2021	0.60	<0.5	<0.5	<0.5	0.22	21
19.06.2021	0.19	<0.5	<0.5	<0.5	0.15	24
21.06.2021	0.07	<0.5	<0.5	<0.5	0.20	20
22.06.2021	0.06	<0.5	<0.5	<0.5	0.14	<20
28.06.2021	0.09	<0.5	<0.5	<0.5	0.10	22
29.06.2021	0.12	<0.5	<0.5	<0.5	0.17	22
Limits for Industrial, Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

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ISO9001:2015
OHSAS (ISO 45001:2018)

Buffer zone TEST REPORT OF AMBIENT AIR QUALITY

Table No. 4

MES/AQ/TR/06/00

Name of the Project : Iron & Steel Plant at Vyasnakere village, Hosapete Taluk,
District Ballari State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Station at & Code : A - 4, Gunda village
Duration : 24 Hrs
Date of Report : 07.07.2021
Reference IS 5182 Report No : MES/MS/ARN/37

Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
04.06.2021	8	11	40	30	<20	<1
05.06.2021	10	13	39	27	<20	<1
07.06.2021	11	12	44	33	<20	<1
08.06.2021	8	12	65	28	<20	<1
18.06.2021	11	13	49	26	<20	<1
19.06.2021	8	11	53	30	<20	<1
21.06.2021	12	13	46	25	<20	<1
22.06.2021	8	10	37	22	<20	<1
28.06.2021	9	11	49	32	<20	<1
29.06.2021	11	16	26	20	<20	<1
Limits for Industrial , Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
04.06.2021	<0.05	<0.5	<0.5	<0.5	0.18	23
05.06.2021	0.05	<0.5	<0.5	<0.5	0.26	20
07.06.2021	0.12	<0.5	<0.5	<0.5	0.20	22
08.06.2021	0.05	<0.5	<0.5	<0.5	0.15	22
18.06.2021	0.09	<0.5	<0.5	<0.5	0.22	22
19.06.2021	0.10	<0.5	<0.5	<0.5	0.17	21
21.06.2021	0.05	<0.5	<0.5	<0.5	0.16	23
22.06.2021	<0.05	<0.5	<0.5	<0.5	0.18	24
28.06.2021	0.10	<0.5	<0.5	<0.5	0.10	20
29.06.2021	0.10	<0.5	<0.5	<0.5	0.14	22
Limits for Industrial , Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

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ISO9001:2015
OHSAS (ISO 45001:2018)

Table No. 5

STACK MONITORING REPORT

MES/STK/TR/03/00

Name of the Project : Iron & Steel Plant at Vysanakere village, Hosapete Taluk,
District Ballari State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Location : Coke Screening
Stack height : 19 m
Stack diameter : 0.7 m
Date of Monitoring : 21.06.2021
Date of Report : 07.07.2021
Report No : MES/MS/STRN/02

SI No	Parameters	IS methods	Result	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012
1	Stack Temperature (°C)	IS 11255 (Part -3)	40	--
2	Velocity (m/sec)	IS 11255 (Part -3)	12.31	--
3	Quantity of Gas flow (Nm ³ /hr)	IS 11255 (Part -3)	15105	--
4	Particulate Matter (PM) (mg/Nm ³)	IS 11255 (Part -1)	30	50


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ISO9001:2015
OHSAS (ISO 45001:2018)

Table No. 6

STACK MONITORING REPORT

MES/STK/FTR/03/00

Name of the Project : Iron & Steel Plant at Vysanakere village, Hosapete Taluk,
District Ballari State Karnataka

Name of the Client : M/s. Sandur Manganese & Iron Ores Limited

Location : Coke Cutter

Stack height : 9 m

Stack diameter : 0.7 m


Date of Monitoring : 21.06.2021

Date of Report : 07.07.2021

Report No : MES/MS/STRN/03

SI No	Parameters	IS methods	Result	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012
1	Stack Temperature (°C)	IS 11255 (Part -3)	39	--
2	Velocity (m/sec)	IS 11255 (Part -3)	7.91	--
3	Quantity of Gas flow (Nm ³ /hr)	IS 11255 (Part -3)	9734	--
4	Particulate Matter (PM) (mg/Nm ³)	IS 11255 (Part -1)	19	50


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ISO9001:2015
OHSAS (ISO 45001:2018)

Table No. 7

STACK MONITORING REPORT

MES/STK/FTR/03/00

Name of the Project : Iron & Steel Plant at Vysanakere village, Hosapete Taluk,
District Ballari State Karnataka

Name of the Client : M/s. Sandur Manganese & Iron Ores Limited

Location : Coal Crushing

Stack height : 9.5 m

Stack diameter : 0.75 m

Date of Monitoring : 21.06.2021

Date of Report : 07.07.2021

Report No : MES/MS/STRN/04

SI No	Parameters	IS methods	Result	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012
3	Stack Temperature (°C)	IS 11255 (Part -3)	39	--
4	Velocity (m/sec)	IS 11255 (Part -3)	11.69	--
5	Quantity of Gas flow (Nm ³ /hr)	IS 11255 (Part -3)	16517	--
8	Particulate Matter (PM) (mg/Nm ³)	IS 11255 (Part -1)	37	50


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ISO9001:2015
OHSAS (ISO 45001:2018)

Table No. 8

STACK MONITORING REPORT

MES/STK/FTR/03/00

Name of the Project : Iron & Steel Plant at Vysanakere village, Hosapete Taluk,
District Ballari State Karnataka

Name of the Client : M/s. Sandur Manganese & Iron Ores Limited

Location : DG 750 KVA

Stack height : 15 m

Stack diameter : 0.3 m

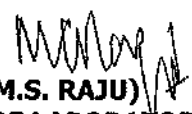
Date of Monitoring : 22.06.2021

Date of Report : 07.07.2021

Report No : MES/MS/STRN/05

SI No	Parameters	IS methods	Result	Tolerance Limits Ref -G.S.R771(E) dated 11.12.2013
3	Temperature ($^{\circ}$ C)	IS 11255 (Part -3)	158	--
4	Velocity (m/sec)	IS 11255 (Part -3)	7.86	--
5	Quantity of Gas flow (Nm ³ /hr)	IS 11255 (Part -3)	514	--
6	Particulate Matter (g/Kw- hr)	IS 11255 (Part -1)	0.063	<0.2
7	CO (g/Kw-hr)	flue gas analyser	0.12	<3.5
8	Nox +HC (g/Kw-hr)	flue gas analyser	0.13	<4.0


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ISO9001:2015
OHSAS (ISO 45001:2018)

Table No. 9

STACK MONITORING REPORT

MES/STK/FTR/03/00

Name of the Project : Iron & Steel Plant at Vysanakere village, Hosapete Taluk,
District Ballari State Karnataka

Name of the Client : M/s. Sandur Manganese & Iron Ores Limited

Location : Coke Oven Battery (Passes through WHRB-1)

Stack height : 60 m

Stack diameter : 3.4 m

Date of Monitoring : 22.06.2021

Date of Report : 07.07.2021

Report No : MES/MS/STRN/06

Sl No	Parameters	IS methods	Result	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012
1	Stack Temperature (°C)	IS 11255 (Part -3)	138	--
2	Velocity (m/sec)	IS 11255 (Part -3)	5.10	--
3	Quantity of Gas flow (Nm ³ /hr)	IS 11255 (Part -3)	118165	--
4	Sulphur Dioxide (SO ₂), mg/Nm ³	IS 11255 (Part -2)	40.12	800
5	Nitrogen Dioxide (NO ₂), mg/Nm ³	IS 11255 (Part -7)	110.00	500
6	Particulate Matter (PM) (mg/Nm ³)	IS 11255 (Part -1)	21	50


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ISO9001:2015
OHSAS (ISO 45001:2018)

Table No. 10

STACK MONITORING REPORT

MES/STK/FTR/03/00

Name of the Project : Iron & Steel Plant at Vysanakere village, Hosapete Taluk,
District Ballari State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Location : Coke Oven Battery (Passes through WHRB-1I)
Stack height : 60 m
Stack diameter : 3.4 m
Date of Monitoring : 22.06.2021
Date of Report : 07.07.2021
Report No : MES/MS/STRN/08

Sl No	Parameters	IS methods	Result	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012
1	Stack Temperature (°C)	IS 11255 (Part -3)	144	--
2	Velocity (m/sec)	IS 11255 (Part -3)	5.44	--
3	Quantity of Gas flow (Nm ³ /hr)	IS 11255 (Part -3)	112370	--
4	Sulphur Dioxide (SO ₂), mg/Nm ³	IS 11255 (Part -2)	45	800
5	Nitrogen Dioxide (NO ₂), mg/Nm ³	IS 11255 (Part -7)	130	500
6	Particulate Matter (PM) (mg/Nm ³)	IS 11255 (Part -1)	18	50


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ISO9001:2015
OHSAS (ISO 45001:2018)

Table No. 11

STACK MONITORING REPORT

MES/STK/TR/03/00

Name of the Project : Iron & Steel Plant at Vysanakere village,
Hosapete Taluk, District Ballari State Karnataka

Name of the Client : M/S. Sandur Manganese & Iron Ores Ltd.
(Metal & Ferro Alloys Plant)

Location : Ferro Alloy Arc Furnace Plant

Stack height : 35 m

Stack diameter : 2.5 m


Date of Monitoring : 22.06.2021

Date of Report : 07.07.2021

Report No : MES/MS/STRN/09

SI No	Parameters	IS methods	Result
1	Stack Temperature (°C)	IS 11255 (Part -3)	80
2	Velocity (m/sec)	IS 11255 (Part -3)	12.62
3	Quantity of Gas flow (Nm ³ /hr)	IS 11255 (Part -3)	175096
6	Particulate Matter (PM) (mg/Nm ³)	IS 11255 (Part -1)	22


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ENVIRONMENTAL MONITORING REPORT

July, 2021

**Project : Iron & Steel Plant
at
Vysanakere village,
Hosapete Taluk,
Ballari District, Karnataka.**

**M/s. Sandur Manganese & Iron Ores Limited
Sandur,
Ballari District, Karnataka**

CONSULTANT

MINERAL ENGINEERING SERVICES

Mining & Environmental Engineers

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LIST OF TABLES

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ISO 9001 : 2015
12-Q-1800012-TIC
BS-OHSAS-18001-2007
12-0-1800013-TIC

Core zone

Table No. 1

TEST REPORT OF AMBIENT AIR QUALITY

MES/AQ/TR/06/00

Name of the Project : Iron & Steel Plant at Vyasanakere village, Hosapete Taluk, District Ballari State Karnataka
 Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
 Station at & Code : A - 1, Core zone near SMIORE Colony
 Duration : 24 Hrs
 Date of Report : 03.08.2021
 Reference IS 5182 Report No : MES/MS/ARN/182

Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
09.07.2021	7	9	35	25	<20	<1
10.07.2021	8	<9	39	35	<20	<1
12.07.2021	4	12	32	18	<20	<1
13.07.2021	9	10	48	29	<20	<1
23.07.2021	<4	9	44	20	<20	<1
24.07.2021	<4	14	39	15	<20	<1
26.07.2021	7	11	51	35	<20	<1
27.07.2021	6	12	56	44	<20	<1
Limits for Industrial , Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
09.07.2021	0.13	<0.5	<0.5	<0.5	0.08	20
10.07.2021	0.15	<0.5	<0.5	<0.5	0.11	21
12.07.2021	0.16	<0.5	<0.5	<0.5	0.11	23
13.07.2021	0.13	<0.5	<0.5	<0.5	0.09	21
23.07.2021	0.18	<0.5	<0.5	<0.5	0.09	24
24.07.2021	0.15	<0.5	<0.5	<0.5	0.15	29
26.07.2021	0.11	<0.5	<0.5	<0.5	0.08	23
27.07.2021	0.17	<0.5	<0.5	<0.5	0.08	20
Limits for Industrial , Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

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ISO 9001 : 2015
12-Q-1800012-TIC
BS-OHSAS-18001-2007
12-0-1800013-TIC

Buffer zone TEST REPORT OF AMBIENT AIR QUALITY


Table No. 2

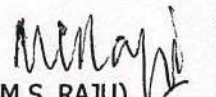
MES/AQ/TR/06/00

Name of the Project	: Iron & Steel Plant at Vyasankere village, Hosapete Taluk, District Ballari State Karnataka					
Name of the Client	: M/s. Sandur Manganese & Iron Ores Limited					
Station at & Code	: A - 2, Vyasankere village					
Duration	: 24 Hrs					
Date of Report	: 03.08.2021					
Reference IS 5182	Report No : MES/MS/ARN/183					
Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
09.07.2021	9	14	56	28	<20	<1
10.07.2021	7	12	40	22	<20	<1
12.07.2021	6	13	36	25	<20	<1
13.07.2021	9	11	44	27	<20	<1
23.07.2021	5	10	53	26	<20	<1
24.07.2021	7	11	48	25	<20	<1
26.07.2021	11	12	50	27	<20	<1
27.07.2021	7	10	57	30	<20	<1
Limits for Industrial , Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
09.07.2021	0.08	<0.5	<0.5	<0.5	0.11	24
10.07.2021	0.09	<0.5	<0.5	<0.5	0.11	23
12.07.2021	0.11	<0.5	<0.5	<0.5	0.15	21
13.07.2021	0.13	<0.5	<0.5	<0.5	0.09	20
23.07.2021	0.07	<0.5	<0.5	<0.5	0.06	23
24.07.2021	0.15	<0.5	<0.5	<0.5	0.06	22
26.07.2021	0.06	<0.5	<0.5	<0.5	0.08	24
27.07.2021	0.05	<0.5	<0.5	<0.5	0.21	23
Limits for Industrial , Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr


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12-0-1800013-TIC

Buffer zone TEST REPORT OF AMBIENT AIR QUALITY

Table No. 3

MES/AQ/TR/06/00

Name of the Project : Iron & Steel Plant at Vyasanakere village, Hosapete Taluk, District Ballari State Karnataka
 Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
 Station at & Code : A - 3, Kallahalli village
 Duration : 24 Hrs
 Date of Report : 03.08.2021
 Reference IS 5182 Report No : MES/MS/ARN/184

Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
09.07.2021	11	16	44	29	<20	<1
10.07.2021	9	12	48	22	<20	<1
12.07.2021	6	15	50	24	<20	<1
13.07.2021	11	13	32	15	<20	<1
23.07.2021	7	12	30	27	<20	<1
24.07.2021	7	10	29	14	<20	<1
26.07.2021	9	11	34	15	<20	<1
27.07.2021	9	10	43	18	<20	<1
Limits for Industrial , Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
09.07.2021	0.04	<0.5	<0.5	<0.5	0.24	22
10.07.2021	0.07	<0.5	<0.5	<0.5	0.16	21
12.07.2021	0.16	<0.5	<0.5	<0.5	0.16	21
13.07.2021	0.05	<0.5	<0.5	<0.5	0.06	20
23.07.2021	<0.05	<0.5	<0.5	<0.5	0.15	23
24.07.2021	0.08	<0.5	<0.5	<0.5	0.22	20
26.07.2021	0.13	<0.5	<0.5	<0.5	0.24	24
27.07.2021	0.05	<0.5	<0.5	<0.5	0.06	21
Limits for Industrial , Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

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ISO 9001 : 2015
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BS-OHSAS-18001-2007
12-0-1800013-TIC

Buffer zone TEST REPORT OF AMBIENT AIR QUALITY

Table No. 4

MES/AQ/TR/06/00

Name of the Project : Iron & Steel Plant at Vyasanakere village, Hosapete Taluk,
District Ballari State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Station at & Code : A - 4, Gunda village
Duration : 24 Hrs
Date of Report : 03.08.2021
Reference IS 5182 Report No : MES/MS/ARN/185

Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
09.07.2021	13	15	35	18	<20	<1
10.07.2021	10	14	41	20	<20	<1
12.07.2021	6	15	42	22	<20	<1
13.07.2021	9	10	51	26	<20	<1
23.07.2021	6	9	46	26	<20	<1
24.07.2021	11	16	33	18	<20	<1
26.07.2021	12	13	44	19	<20	<1
27.07.2021	9	13	51	29	<20	<1
Limits for Industrial , Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
09.07.2021	0.05	<0.5	<0.5	<0.5	0.16	20
10.07.2021	0.13	<0.5	<0.5	<0.5	0.22	25
12.07.2021	0.05	<0.5	<0.5	<0.5	0.05	26
13.07.2021	0.16	<0.5	<0.5	<0.5	<0.05	23
23.07.2021	0.05	<0.5	<0.5	<0.5	0.15	20
24.07.2021	0.17	<0.5	<0.5	<0.5	0.18	24
26.07.2021	0.13	<0.5	<0.5	<0.5	0.06	23
27.07.2021	0.06	<0.5	<0.5	<0.5	0.06	20
Limits for Industrial , Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

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12-Q-1800013-TIC

Table No. 5


Test Report of Fugitive Emission

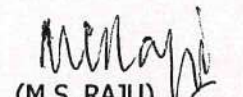
MES/AQ/TR/06/00

Name of the Project : Iron & Steel Plant at Vyasanakere village, Hosapete Taluk,
District Ballari State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Station at & Code : A - 5, Near Arc Furnace
Duration : 08 Hrs
Month : July, 2021
Date of Report : 03.08.2021
Report No : MES/MS/ARN/186
Reference IS 5182

Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	Lead (Pb), µg/m ³	Carbon Monoxide* (CO), mg/m ³
24.07.2021	10	12	748	0.06	0.18
Permissible limits for Fugitive Emissions as per G.S.R.277E Dated on 31.03.2012	150 8 Hrs	120 8 Hrs	3000 8 Hrs	2.0 8 Hrs	10 1 Hr

Note : * Parameters monitored for period of 1 hr


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BS-OHSAS-18001-2007
12-0-1800013-TIC

Table No. 6


Test Report of Fugitive Emission

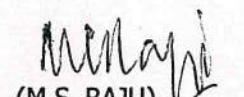
MES/AQ/TR/06/00

Name of the Project : Iron & Steel Plant at Vyasanakere village, Hosapete Taluk, District Ballari, State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Station at & Code : A - 6, Near Power plant
Duration : 08 Hrs
Month : July, 2021
Date of Report : 03.08.2021
Report No : MES/MS/ARN/187
Reference IS 5182

Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	Lead (Pb), µg/m ³	Carbon Monoxide* (CO), mg/m ³
25.07.2021	11	14	655	0.11	0.23
Permissible limits for Fugitive Emissions as per G.S.R.277E Dated on 31.03.2012	150 8 Hrs	120 8 Hrs	3000 8 Hrs	2.0 8 Hrs	10 1 Hr

Note : * Parameters monitored for period of 1 hr


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Table No. 7


Test Report of Fugitive Emission

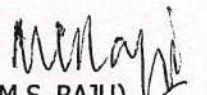
MES/AQ/TR/06/00

Name of the Project : Iron & Steel Plant at Vyasanakere village, Hosapete Taluk,
District Ballari, State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Station at & Code : A - 7, Near Coal Shed Area
Duration : 08 Hrs
Month : July, 2021
Date of Report : 03.08.2021
Report No : MES/MS/ARN/188
Reference IS 5182

Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	Lead (Pb), µg/m ³	Carbon Monoxide* (CO), mg/m ³
24.07.2021	9	13	750	0.23	0.17
Permissible limits for Fugitive Emissions as per G.S.R.277E Dated on 31.03.2012	150 8 Hrs	120 8 Hrs	3000 8 Hrs	2.0 8 Hrs	10 1 Hr

Note : * Parameters monitored for period of 1 hr


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ISO 9001 : 2015
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12-O-1800013-TIC

Table No. 8


Test Report of Fugitive Emission

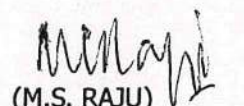
MES/AQ/TR/06/00

Name of the Project : Iron & Steel Plant at Vyasanakere village, Hosapete Taluk,
District Ballari, State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Station at & Code : A - 8, Near Coke Oven plant
Duration : 24 Hrs
Month : July, 2021
Date of Report : 03.08.2021
Report No : MES/MS/ARN/189
Reference IS 5182

Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	Lead (Pb), µg/m ³	Carbon Monoxide* (CO), mg/m ³
25.07.2021	12	14	690	0.08	0.16
Permissible limits for Fugitive Emissions as per G.S.R.277E Dated on 31.03.2012	150 8 Hrs	120 8 Hrs	3000 8 Hrs	2.0 8 Hrs	10 1 Hr

Note : * Parameters monitored for period of 1 hr


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12-0-1800013-TIC

Table No.9


Test Report of Fugitive Emission

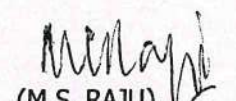
MES/AQ/TR/06/00

Name of the Project : Iron & Steel Plant at Vysanakere village, Hosapete Taluk,
District Ballari, State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Station at & Code : A - 9, Near Main gate
Duration : 24 Hrs
Month : July, 2021
Date of Report : 03.08.2021
Report No : MES/MS/ARN/190
Reference IS 5182

Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	Lead (Pb), µg/m ³	Carbon Monoxide* (CO), mg/m ³
24.07.2021	7	15	711	0.17	0.15
Permissible limits for Fugitive Emissions as per G.S.R.277E Dated on 31.03.2012	150 8 Hrs	120 8 Hrs	3000 8 Hrs	2.0 8 Hrs	10 1 Hr

Note : * Parameters monitored for period of 1 hr


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12-Q-1800013-TIC

Table No. 10


Test Report of Fugitive Emission

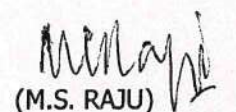
MES/AQ/TR/06/00

Name of the Project : Iron & Steel Plant at Vyasankere village, Hosapete Taluk,
District Ballari, State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Station at & Code : A - 10, Iron ore Benefication plant
Duration : 24 Hrs
Month : July, 2021
Date of Report : 03.08.2021
Report No : MES/MS/ARN/191
Reference IS 5182

Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	Lead (Pb), µg/m ³	Carbon Monoxide* (CO), mg/m ³
25.07.2021	8	14	655	0.22	0.54
Permissible limits for Fugitive Emissions as per G.S.R.277E Dated on 31.03.2012	150 8 Hrs	120 8 Hrs	3000 8 Hrs	2.0 8 Hrs	10 1 Hr

Note : * Parameters monitored for period of 1 hr


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12-0-1800013-TIC

Table No. 11

AMBIENT NOISE LEVEL DATA

MES/NOISE/FR/02/00

Name of the Project : Iron & Steel Plant at Vysanakere village,
Hosapete Taluk, District Ballari, State Karnataka

Name of the Client : M/s. Sandur Manganese & Iron Ores Limited

Date of monitoring : 24.07.2021

Date of Report : 03.08.2021

Report No : MES/MS/NRN/11

Code No.	Monitoring stations	Day			Night		
		L _{min}	L _{eq}	L _{max}	L _{min}	L _{eq}	L _{max}
Buffer zone							
N1	Vyasankere village	39.0	51.9	56.3	34.5	42.3	48.0
N2	Kallahalli village	42.0	54.3	56.9	35.0	42.0	45.8
N3	Gunda village	37.3	47.3	51.0	34.6	40.8	43.0
N4	Hanumanhalli village	36.0	50.6	55.3	34.0	43.7	47.0
N5	Rajapura village	41.0	48.6	53.0	36.0	40.5	44.3
N6	Venkatagiri village	39.5	50.6	54.0	34.0	41.6	46.0
N7	Ramgad village	37.0	49.2	54.2	35.0	42.2	47.0
Corezone							
N8	Core zone near SMIORE Colony	40.0	55.3	65.0	36.0	49.0	54.5

Permissible Limits of Ambient Noise Levels as per CPCB Guidelines

	Leq. Limit dB(A)	
	Day	Night
Industrial areas	75	70
Commercial area	65	55
Residential area	55	45

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ISO 9001 : 2015
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BS-OHSAS-18001-2007
12-0-1800013-TIC

Table No. 12

FUGITIVE NOISE LEVEL DATA

MES/NOISE/FR/02/00

Name of the Project : Iron & Steel Plant at Vyasnakere village,
Hosapete Taluk, District Ballari, State Karnataka
Name of the Client : M/s. Sandur Manganese & Iron Ores Limited
Date of monitoring : 24.07.2021
Date of Report : 03.08.2021
Report No : MES/MS/NRN/12

Code No.	Monitoring stations	Day			Remarks
		L _{min}	L _{eq}	L _{max}	
Corezone					
1	Near Coal Crusher Area.	48.0	54.3	63.0	During operation
2	Near Coke Cutting Area	53.0	60.6	65.7	During operation
3	Near Coke Screening Area	51.0	63.9	70.0	During operation
4	Near WHRB -1 Plant Area	42.8	45.8	51.0	During operation
5	Near Arc Furnace	66.0	70.7	72.9	---
6	Near Power Plant	48.0	56.6	63.0	During operation
7	Near Coal Shed Area	43.0	52.5	67.0	During operation
8	Near Coke Oven plant	51.0	61.5	66.0	During operation
9	Near DG Area	52.0	58.6	61.5	Monitoring done at 1mts distance from 750KVA DG

Permissible limits as per ILO Code of Practice

For Unprotected ear - 8 hrs working shift

Warning limit - 85 dB(A)


Danger limit - 90 dB(A)

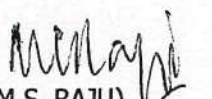
Worker not to be exposed for more than 115 dB(A)

With ear protection -

130 dB(A) 'Impulse' or 120 dB(A) 'Fast'

No entry when noise level exceeds 140 dB(A)


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12-O-1800013-TIC

Table No. 13

STACK MONITORING REPORT

MES/STK/TR/03/00

Name of the Project : Iron & Steel Plant at Vysanakere village, Hosapete Taluk,
District Ballari State Karnataka

Name of the Client : M/s. Sandur Manganese & Iron Ores Limited

Location : Coke Screening

Stack height : 19 m

Stack diameter : 0.7 m

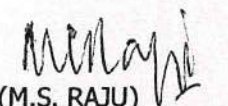
Date of Monitoring : 26.07.2021

Date of Report : 03.08.2021

Report No : MES/MS/STRN/20

Sl No	Parameters	IS methods	Result	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012
1	Stack Temperature (°C)	IS 11255 (Part -3)	40	--
2	Velocity (m/sec)	IS 11255 (Part -3)	12.1	--
3	Quantity of Gas flow (Nm ³ /hr)	IS 11255 (Part -3)	14850	--
4	Particulate Matter (PM) (mg/Nm ³)	IS 11255 (Part -1)	17	50


(M.R. DURGA PRASAD)
GOVT. ANALYST


(M.S. RAJU)
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MINERAL ENGINEERING SERVICES

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No. SO 857 (E) dated 26.02.2018. Recognition valid upto 25.02.2023



ISO 9001 : 2015
12-Q-1800012-TIC
BS-OHSAS-18001-2007
12-O-1800013-TIC

Table No. 14

STACK MONITORING REPORT

MES/STK/FTR/03/00

Name of the Project : Iron & Steel Plant at Vysanakere village, Hosapete Taluk,
District Ballari State Karnataka

Name of the Client : M/s. Sandur Manganese & Iron Ores Limited

Location : Coke Cutter

Stack height : 9 m


Stack diameter : 0.7 m

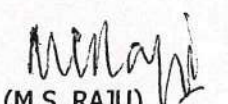
Date of Monitoring : 26.07.2021

Date of Report : 03.08.2021

Report No : MES/MS/STRN/21

SI No	Parameters	IS methods	Result	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012
1	Stack Temperature (°C)	IS 11255 (Part -3)	39	--
2	Velocity (m/sec)	IS 11255 (Part -3)	8.01	--
3	Quantity of Gas flow (Nm ³ /hr)	IS 11255 (Part -3)	9865	--
4	Particulate Matter (PM) (mg/Nm ³)	IS 11255 (Part -1)	18	50


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ISO 9001 : 2015
12-Q-1800012-TIC
BS-OHSAS-18001-2007
12-O-1800013-TIC

Table No. 15

STACK MONITORING REPORT

MES/STK/FTR/03/00

Name of the Project : Iron & Steel Plant at Vyasanakere village, Hosapete Taluk,
District Ballari State Karnataka

Name of the Client : M/s. Sandur Manganese & Iron Ores Limited

Location : Coal Crushing

Stack height : 9.5 m

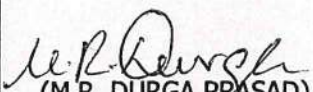
Stack diameter : 0.75 m

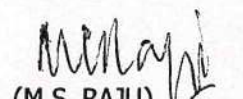
Date of Monitoring : 26.07.2021

Date of Report : 03.08.2021

Report No : MES/MS/STRN/22

SI No	Parameters	IS methods	Result	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012
3	Stack Temperature (°C)	IS 11255 (Part -3)	39	--
4	Velocity (m/sec)	IS 11255 (Part -3)	12.74	--
5	Quantity of Gas flow (Nm ³ /hr)	IS 11255 (Part -3)	18005	--
8	Particulate Matter (PM) (mg/Nm ³)	IS 11255 (Part -1)	16	50


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ISO 9001 : 2015
12-Q-1800012-TIC
BS-OHSAS-18001-2007
12-Q-1800013-TIC

Table No. 16

STACK MONITORING REPORT

MES/STK/FTR/03/00

Name of the Project : Iron & Steel Plant at Vysanakere village, Hosapete Taluk,
District Ballari State Karnataka

Name of the Client : M/s. Sandur Manganese & Iron Ores Limited

Location : DG 750 KVA

Stack height : 15 m


Stack diameter : 0.3 m

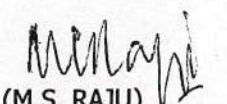
Date of Monitoring : 27.07.2021

Date of Report : 03.08.2021

Report No : MES/MS/STRN/23

SI No	Parameters	IS methods	Result	Tolerance Limits Ref -G.S.R771(E) dated 11.12.2013
3	Temperature ($^{\circ}$ C)	IS 11255 (Part -3)	158	--
4	Velocity (m/sec)	IS 11255 (Part -3)	13.94	--
5	Quantity of Gas flow (Nm ³ /hr)	IS 11255 (Part -3)	911	--
6	Particulate Matter (g/Kw- hr)	IS 11255 (Part -1)	0.105	<0.2
7	CO (g/Kw-hr)	flue gas analyser	0.2	<3.5
8	Nox +HC (g/Kw-hr)	flue gas analyser	0.20	<4.0


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ISO 9001 : 2015
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BS-OHSAS-18001-2007
12-Q-1800013-TIC

Table No. 17

STACK MONITORING REPORT

MES/STK/FTR/03/00

Name of the Project : Iron & Steel Plant at Vyasanakere village, Hosapete Taluk,
District Ballari State Karnataka

Name of the Client : M/s. Sandur Manganese & Iron Ores Limited

Location : Coke Oven Battery (Passes through WHRB-1)

Stack height : 60 m


Stack diameter : 3.4 m

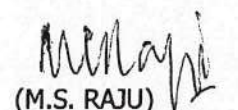
Date of Monitoring : 27.07.2021

Date of Report : 03.08.2021

Report No : MES/MS/STRN/24

SI No	Parameters	IS methods	Result	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012
1	Stack Temperature (°C)	IS 11255 (Part -3)	144	--
2	Velocity (m/sec)	IS 11255 (Part -3)	7.33	--
3	Quantity of Gas flow (Nm ³ /hr)	IS 11255 (Part -3)	159204	--
4	Sulphur Dioxide (SO ₂), mg/Nm ³	IS 11255 (Part -2)	35.61	800
5	Nitrogen Dioxide (NO ₂), mg/Nm ³	IS 11255 (Part -7)	106.00	500
6	Particulate Matter (PM) (mg/Nm ³)	IS 11255 (Part -1)	18	50


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ISO 9001 : 2015
12-Q-1800012-TIC
BS-OHSAS-18001-2007
12-0-1800013-TIC

Table No. 18

STACK MONITORING REPORT

MES/STK/FTR/03/00

Name of the Project : Iron & Steel Plant at Vysanakere village, Hosapete Taluk,
District Ballari State Karnataka

Name of the Client : M/s. Sandur Manganese & Iron Ores Limited

Location : Coke Oven Battery (Passes through WHRB-1I)

Stack height : 60 m


Stack diameter : 3.4 m

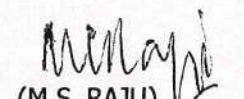
Date of Monitoring : 27.07.2021

Date of Report : 03.08.2021

Report No : MES/MS/STRN/25

SI No	Parameters	IS methods	Result	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012
1	Stack Temperature (°C)	IS 11255 (Part -3)	138	--
2	Velocity (m/sec)	IS 11255 (Part -3)	5.22	--
3	Quantity of Gas flow (Nm ³ /hr)	IS 11255 (Part -3)	115078	--
4	Sulphur Dioxide (SO ₂), mg/Nm ³	IS 11255 (Part -2)	40	800
5	Nitrogen Dioxide (NO ₂), mg/Nm ³	IS 11255 (Part -7)	126	500
6	Particulate Matter (PM) (mg/Nm ³)	IS 11255 (Part -1)	17	50


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ISO 9001 : 2015
12-Q-1800012-TIC
BS-OHSAS-18001-2007
12-O-1800013-TIC

Table No. 19

STACK MONITORING REPORT

MES/STK/TR/03/00

Name of the Project : Iron & Steel Plant at Vyasanakere village,
Hosapete Taluk, District Ballari State Karnataka

Name of the Client : M/S. Sandur Manganese & Iron Ores Ltd.
(Metal & Ferro Alloys Plant)

Location : Ferro Alloy Arc Furnace Plant

Stack height : 35 m

Stack diameter : 2.5 m

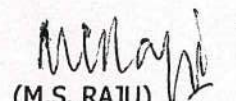
Date of Monitoring : 27.07.2021

Date of Report : 03.08.2021

Report No : MES/MS/STRN/26

SI No	Parameters	IS methods	Result
1	Stack Temperature (°C)	IS 11255 (Part -3)	80
2	Velocity (m/sec)	IS 11255 (Part -3)	12.53
3	Quantity of Gas flow (Nm ³ /hr)	IS 11255 (Part -3)	173895
6	Particulate Matter (PM) (mg/Nm ³)	IS 11255 (Part -1)	12


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MSV Analytical Laboratories

Recognition by MoEF under Environment (Protection) Act, 1986

(Certified by ISO-14001-2015, ISO 22000-2018, ISO 45001-2018, ISO 9001-2015)

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E-mail : msv.lab01@gmail.com, labmsv@gmail.com, Website : www.msvbellary.com

MSVAL/A/F/16/03

ANALYSIS REPORT OF AMBIENT AIR QUALITY

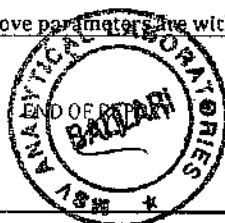
1.	Name of the Industry	:	M/s. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant)
2.	Address	:	Vyasanakere, Hanumanahalli Village, Hospet Taluk, Bellary District, Karnataka.
3.	Sample Collected By	:	MSV Analytical laboratories, Bellary.
4.	Particulars of Sample Collected	:	RDS-460BL, FPS-APM 550
5.	Month of Collection	:	August 2021
6.	Name of the location	:	Smiore Colony
7.	Report Issued Date	:	02.09.2021

Weeks	PARAMETERS & THEIR MAXIMUM STANDARDS		PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]	Ammonia [NH ₃] [µg/m ³]	Ozone [O ₃] [µg/m ³]
			MAX STD	MAX STD	MAX STD	MAX STD	MAX STD	MAX STD
			100	60	80	80	400	180
	Protocols		IS-5182 (P-6) - 2006	LAB SOP	IS 5182 (P-9) 1974	IS-5182 (P-23) -2006	LAB SOP	IS-5182 (P-2) -2001
	Report Number	Date of Sampling	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS
I st	MSVAL/2021/5580	02.08.21	58.4	28.7	9.2	18.5	Nil	9.5
	MSVAL/2021/5693	06.08.21	59.4	22.7	10.5	20.8	Nil	11.5
II nd	MSVAL/2021/5774	09.08.21	60.7	19.4	9.8	16.3	Nil	9.3
	MSVAL/2021/5923	13.08.21	59.7	19.3	10.7	16.9	Nil	10.3
III rd	MSVAL/2021/5944	16.08.21	58.7	21.6	11.6	19.3	Nil	11.0
	MSVAL/2021/6050	20.08.21	57.3	19.3	10.2	16.6	Nil	10.3
IV th	MSVAL/2021/6145	23.08.21	55.1	17.4	10.3	19.6	Nil	10.2
	MSVAL/2021/6169	27.08.21	57.4	23.7	10.5	21.3	Nil	11.4

Weeks	PARAMETERS & THEIR MAXIMUM STANDARDS		Lead [Pb] [µg/m ³]	Nickel [Ni] [ng/m ³]	Arsenic [As] [ng/m ³]	Benzene [C ₆ H ₆] [µg/m ³]	Benzo(a)pyrene [Bap] [ng/m ³]	Carbon Monoxide [CO] [mg/m ³]
			MAX STD	MAX STD	MAX STD	MAX STD	MAX STD	MAX STD
			1.0	20	06	5.0	1.0	4.0
	Protocols		IS:5182 (P 11) - 2006	CPCB Procedure	LAB SOP	IS-5182 (P-2) - 2004	LAB SOP	CPCB Procedure
	REPORT NUMBER	Date of Sampling	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS
I st	MSVAL/2021/5580	02.08.21	0.028	1.16	<0.5	<1.0	<0.5	0.38
	MSVAL/2021/5693	06.08.21	0.028	1.21	<0.5	<1.0	<0.5	0.36
II nd	MSVAL/2021/5774	09.08.21	0.019	1.19	<0.5	<1.0	<0.5	0.40
	MSVAL/2021/5923	13.08.21	0.023	1.21	<0.5	<1.0	<0.5	0.42
III rd	MSVAL/2021/5944	16.08.21	0.033	1.04	<0.5	<1.0	<0.5	0.41
	MSVAL/2021/6050	20.08.21	0.020	0.98	<0.5	<1.0	<0.5	0.43
IV th	MSVAL/2021/6145	23.08.21	0.028	1.07	<0.5	<1.0	<0.5	0.44
	MSVAL/2021/6169	27.08.21	0.027	1.24	<0.5	<1.0	<0.5	0.40

INFERENCE	As per NAAQ Standards Report Status: Measured values For the above parameters are within the limit.
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Verified by



Authorized Signature

- Note: 1. The results listed only to the tested samples & applicable parameters,
2. Water samples will destroyed after 10days, Filter papers & Thimbles will be destroyed 3months from the date of issue of test certificate unless otherwise specified. ILC sample will be destroyed after 1 month from the date of test certificate issue.
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Sanganakallu Road, KEB Circle, Ballari - 583103 Contact No : Mob : 94498 03895, (O) : 08392-255169,

E-mail : msv.lab01@gmail.com, labmsv@gmail.com, Website : www.msvlabellary.com

MSVAL/A/E/16/03

ANALYSIS REPORT OF AMBIENT AIR QUALITY

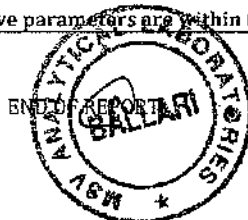
1.	Name of the Industry	:	M/s. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant)
2.	Address	:	Vyasanakere, Hanumanahalli Village, Hospet Taluk, Bellary District, Karnataka.
3.	Sample Collected By	:	MSV Analytical laboratories, Bellary.
4.	Particulars of Sample Collected	:	RDS-460BL, FPS-APM 550
5.	Month of Collection	:	August 2021
6.	Name of the location	:	Kallahalli Village
7.	Report Issued Date	:	02.09.2021

Weeks	PARAMETERS & THEIR MAXIMUM STANDARDS		PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]	Ammonia [NH ₃] [µg/m ³]	Ozone [O ₃] [µg/m ³]
			MAX STD	MAX STD	MAX STD	MAX STD	MAX STD	MAX STD
			100	60	80	80	400	180
	Protocols		IS-5182 (P-6) - 2006	LAB SOP	IS 5182 (P-9) 1974	IS-5182 (P-23) -2006	LAB SOP	IS-5182 (P-2) -2001
	Report Number	Date of Sampling	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS
I st	MSVAL/2021/5581	02.08.21	54.5	17.4	7.2	15.3	Nil	8.6
	MSVAL/2021/5694	06.08.21	52.8	15.4	6.2	13.6	Nil	6.9
II nd	MSVAL/2021/5775	09.08.21	55.3	16.7	8.8	15.0	Nil	8.1
	MSVAL/2021/5924	13.08.21	55.7	16.2	8.1	14.7	Nil	7.9
III rd	MSVAL/2021/5945	16.08.21	57.0	17.3	9.5	15.4	Nil	9.3
	MSVAL/2021/6051	20.08.21	55.3	16.3	7.6	12.8	Nil	9.2
IV th	MSVAL/2021/6146	23.08.21	53.0	15.6	8.6	14.4	Nil	8.3
	MSVAL/2021/6170	27.08.21	52.6	18.7	8.4	16.3	Nil	9.8

Weeks	PARAMETERS & THEIR MAXIMUM STANDARDS		Lead [Pb] [µg/m ³]	Nickel [Ni] [ng/m ³]	Arsenic [As] [ng/m ³]	Benzene [C ₆ H ₆] [µg/m ³]	Benzo(a)pyrene [Bap] [ng/m ³]	Carbon Monoxide [CO] [mg/m ³]
			MAX STD	MAX STD	MAX STD	MAX STD	MAX STD	MAX STD
			1.0	20	06	5.0	1.0	4.0
	Protocols		IS:5182 (P 11) - 2006	CPCB Procedure	LAB SOP	IS-5182 (P-2) - 2004	LAB SOP	CPCB Procedure
	REPORT NUMBER	Date of Sampling	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS
I st	MSVAL/2021/5581	02.08.21	0.021	1.15	<0.5	<1.0	<0.5	0.33
	MSVAL/2021/5694	06.08.21	0.021	1.20	<0.5	<1.0	<0.5	0.28
II nd	MSVAL/2021/5775	09.08.21	0.017	1.15	<0.5	<1.0	<0.5	0.29
	MSVAL/2021/5924	13.08.21	0.016	1.13	<0.5	<1.0	<0.5	0.28
III rd	MSVAL/2021/5945	16.08.21	0.028	1.20	<0.5	<1.0	<0.5	0.20
	MSVAL/2021/6051	20.08.21	0.022	1.15	<0.5	<1.0	<0.5	0.16
IV th	MSVAL/2021/6146	23.08.21	0.015	1.10	<0.5	<1.0	<0.5	0.16
	MSVAL/2021/6170	27.08.21	0.035	1.16	<0.5	<1.0	<0.5	0.29

INFERENCE	As per NAAQ Standards Report Status: Measured values For the above parameters are within the limit.
-----------	--

Verified by



Authorized Signature

- Note : 1. The results listed only to the tested samples & applicable parameters,
 2. Water samples will be destroyed after 10 days, Filter papers & Thimbles will be destroyed 3 months from the date of issue of test certificate unless otherwise specified. ILC sample will be destroyed after 1 month from the date of test certificate issue.
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MSVAL/A/F/16/03

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1.	Name of the Industry	:	M/s. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant)
2.	Address	:	Vyasanakere, Hanumanaballi Village, Hospet Taluk, Bellary District, Karnataka.
3.	Sample Collected By	:	MSV Analytical laboratories, Bellary.
4.	Particulars of Sample Collected	:	RDS-460BL, FPS-APM 550
5.	Month of Collection	:	August 2021
6.	Name of the location	:	Vyasanakere Village
7.	Report Issued Date	:	02.09.2021

Weeks	PARAMETERS & THEIR MAXIMUM STANDARDS		PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]	Ammonia [NH ₃] [µg/m ³]	Ozone [O ₃] [µg/m ³]
			MAX STD	MAX STD	MAX STD	MAX STD	MAX STD	MAX STD
			100	60	80	80	400	180
	Protocols		IS-5182 (P-6) -2006	LAB SOP	IS 5182 (P-9) 1974	IS-5182 (P-23) -2006	LAB SOP	IS-5182 (P-2) -2001
	Report Number	Date of Sampling	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS
I st	MSVAL/2021/5582	02.08.21	53.5	16.4	6.6	14.3	Nil	7.2
	MSVAL/2021/5695	06.08.21	54.7	17.4	7.3	15.2	Nil	8.8
II nd	MSVAL/2021/5776	09.08.21	56.7	17.4	8.8	15.7	Nil	8.4
	MSVAL/2021/5925	13.08.21	54.3	16.7	8.1	15.7	Nil	7.4
III rd	MSVAL/2021/5946	16.08.21	51.9	16.3	7.4	14.5	Nil	7.9
	MSVAL/2021/6052	20.08.21	52.5	15.4	6.6	11.6	Nil	7.0
IV th	MSVAL/2021/6147	23.08.21	53.5	14.2	7.3	13.5	Nil	6.2
	MSVAL/2021/6171	27.08.21	54.5	21.4	9.1	19.6	Nil	9.2

Weeks	PARAMETERS & THEIR MAXIMUM STANDARDS		Lead [Pb] [µg/m ³]	Nickel [Ni] [ng/m ³]	Arsenic [As] [ng/m ³]	Benzene [C ₆ H ₆] [µg/m ³]	Benzo(a)pyrene [Bap] [ng/m ³]	Carbon Monoxide [CO] [mg/m ³]
			MAX STD	MAX STD	MAX STD	MAX STD	MAX STD	MAX STD
			1.0	20	06	5.0	1.0	4.0
	Protocols		IS:5182 (P 11) - 2006	CPCB Procedure	LAB SOP	IS-5182 (P-2) - 2004	LAB SOP	CPCB Procedure
	REPORT NUMBER	Date of Sampling	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS
I st	MSVAL/2021/5582	02.08.21	0.019	1.22	<0.5	<1.0	<0.5	0.18
	MSVAL/2021/5695	06.08.21	0.025	1.16	<0.5	<1.0	<0.5	0.27
II nd	MSVAL/2021/5776	09.08.21	0.016	1.17	<0.5	<1.0	<0.5	0.30
	MSVAL/2021/5925	13.08.21	0.015	1.16	<0.5	<1.0	<0.5	0.23
III rd	MSVAL/2021/5946	16.08.21	0.019	1.18	<0.5	<1.0	<0.5	0.20
	MSVAL/2021/6052	20.08.21	0.015	1.16	<0.5	<1.0	<0.5	0.22
IV th	MSVAL/2021/6147	23.08.21	0.015	1.15	<0.5	<1.0	<0.5	0.20
	MSVAL/2021/6171	27.08.21	0.026	1.10	<0.5	<1.0	<0.5	0.33

INFERENCE	As per NAAQ Standards Report Status: Measured values For the above parameters are within the limit.
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MSVAL/A/F/16/03

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1.	Name of the Industry	:	M/s. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant)
2.	Address	:	Vyasanakere, Hanumanahalli Village, Hospet Taluk, Bellary District, Karnataka.
3.	Sample Collected By	:	MSV Analytical laboratories, Bellary.
4.	Particulars of Sample Collected	:	RDS-460BL, FPS-APM 550
5.	Month of Collection	:	August 2021
6.	Name of the location	:	Gunda Village
7.	Report Issued Date	:	02.09.2021

Weeks	PARAMETERS & THEIR MAXIMUM STANDARDS		PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]	Ammonia [NH ₃] [µg/m ³]	Ozone [O ₃] [µg/m ³]
			MAX STD	MAX STD	MAX STD	MAX STD	MAX STD	MAX STD
			100	60	80	80	400	180
Protocols			IS-5182 (P-6) - 2006	LAB SOP	IS 5182 (P-9) 1974	IS-5182 (P-23) -2006	LAB SOP	IS-5182 (P-2) -2001
	Report Number	Date of Sampling	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS
I st	MSVAL/2021/5583	02.08.21	56.3	19.8	8.2	17.3	Nil	8.7
	MSVAL/2021/5696	06.08.21	57.2	18.6	9.4	16.7	Nil	8.3
I nd	MSVAL/2021/5777	09.08.21	53.4	14.5	7.8	14.7	Nil	7.2
	MSVAL/2021/5926	13.08.21	51.7	15.2	7.4	14.4	Nil	8.9
III rd	MSVAL/2021/5947	16.08.21	54.3	15.2	7.8	13.4	Nil	8.5
	MSVAL/2021/6053	20.08.21	53.3	14.1	6.6	10.9	Nil	7.8
IV th	MSVAL/2021/6148	23.08.21	54.5	13.6	8.8	12.3	Nil	8.6
	MSVAL/2021/6172	27.08.21	55.7	20.6	7.3	17.2	Nil	8.3

Weeks	PARAMETERS & THEIR MAXIMUM STANDARDS		Lead [Pb] [µg/m ³]	Nickel [Ni] [ng/m ³]	Arsenic [As] [ng/m ³]	Benzene [C ₆ H ₆] [µg/m ³]	Benzo(a)pyrene [Bap] [ng/m ³]	Carbon Monoxide [CO] [mg/m ³]
			MAX STD	MAX STD	MAX STD	MAX STD	MAX STD	MAX STD
			1.0	20	06	5.0	1.0	4.0
Protocols			IS:5182 (P 11) - 2006	CPCB Procedure	LAB SOP	IS-5182 (P-2) - 2004	LAB SOP	CPCB Procedure
	REPORT NUMBER	Date of Sampling	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS
I st	MSVAL/2021/5583	02.08.21	0.030	1.24	<0.5	<1.0	<0.5	0.24
	MSVAL/2021/5696	06.08.21	0.023	1.21	<0.5	<1.0	<0.5	0.30
I nd	MSVAL/2021/5777	09.08.21	0.016	1.13	<0.5	<1.0	<0.5	0.27
	MSVAL/2021/5926	13.08.21	0.019	1.18	<0.5	<1.0	<0.5	0.24
III rd	MSVAL/2021/5947	16.08.21	0.018	1.24	<0.5	<1.0	<0.5	0.18
	MSVAL/2021/6053	20.08.21	0.020	1.24	<0.5	<1.0	<0.5	0.18
IV th	MSVAL/2021/6148	23.08.21	0.014	1.24	<0.5	<1.0	<0.5	0.14
	MSVAL/2021/6172	27.08.21	0.019	1.25	<0.5	<1.0	<0.5	0.32

INFERENCE	As per NAAQ Standards Report Status: Measured values For the above parameters are within the limit.
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Verified by



Authorized Signature

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MSVAL/A/F/18/03

ANALYSIS REPORT FOR SOURCE EMISSION

Test Report No :MSVAL/2021/ 6173

Report Issued Date : 02.09.2021

1. Name of the Industry : M/s. The Sandur Manganese & Iron Ores Ltd.
(Metal & Ferro Alloys Plant)
Vyasanakere, Hanumanahalli Village,
Hospet Taluk, Bellary District, Karnataka.
2. Stack ID : DG Set 750 KVA
3. Sample Collected By : MSV Analytical Laboratories, Bellary.
4. Particulars of Sample Collected : Sample collected with VSS - 1
5. Date of Sample Receipt : 27.08.2021
6. Analysis Starting Date : 28.08.2021
7. Analysis Completion Date : 29.08.2021
8. Sample Tested as Received

GENERAL DETAILS

Date of Monitoring	27.08.2021
Fuel Used	Diesel
Stack Temperature (°C)	97
Velocity (m/s)	7.4
Height (m)	15mtrs AGL
Diameter (m)	0.3
Cross sectional area (m ²)	0.07065

RESULTS

Parameters	Protocol	Unit	Result	KSPCB Consent Standards
Particulate Matter	IS-11255(Part1) - 1985	mg/Nm ³	46.7	100
Sulphur dioxide	IS-11255(Part2) - 1985	PPM	26.1	50
Nitrogen dioxide	IS-11255(Part7) - 2005	PPM	20.3	50

INFERENCE	As per KSPCB Consent Standards. Report Status :- The analyzed value for above measured parameter is within the limits.
-----------	---

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MSVAL/A/F/18/03

ANALYSIS REPORT FOR SOURCE EMISSION

Test Report No : TC720721000011432

Report Issued Date : 02.09.2021

1. Name of the Industry : M/s. The Sandur Manganese & Iron Ores Ltd.
(Metal & Ferro Alloys Plant) -
Vyasankere, Hanumanahalli Village,
Hospet Taluk, Bellary District, Karnataka.
2. Stack ID : Coke Screening & Store
3. Sample Collected By : MSV Analytical Laboratories, Bellary.
4. Particulars of Sample Collected : Sample collected with VSS - 1
5. Date of Sample Receipt : 07.08.2021
6. Analysis Starting Date : 08.08.2021
7. Analysis Completion Date : 09.08.2021
8. Sample Tested as Received

GENERAL DETAILS

Date of Monitoring	07.08.2021
Fuel Used	---
Stack Temperature (°C)	40
Velocity (m/s)	7.7
Height (m)	15mtrs AGL
Diameter (m)	0.7
Cross sectional area (m ²)	0.38465

RESULTS

Parameters	Protocol	Unit	Result	GSR 277 (E) Standards
Particulate Matter	IS-11255(Part1) - 1985	mg/Nm ³	32.2	50
Sulphur dioxide	IS-11255(Part2) - 1985	mg/Nm ³	16.6	800
Nitrogen dioxide	IS-11255(Part7) - 2005	mg/Nm ³	12.2	500
Carbon Monoxide as(CO)	IS 13270	%	0.20	Max 1%

INFERENCE	As per GSR 277 (E) Standards. Report Status :- The analyzed value for above measured parameter is within the limits.
-----------	---

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Authorized Signature

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MSVAL/A/F/18/03

ANALYSIS REPORT FOR SOURCE EMISSION

Test Report No : TC720721000011433

Report Issued Date : 02.09.2021

- Name of the Industry** : M/s. The Sandur Manganese & Iron Ores Ltd.
(Metal & Ferro Alloys Plant)
Vyasanakere, Hanumanahalli Village,
Hospet Taluk, Bellary District, Karnataka.
- Stack ID** : Coke Cutter
- Sample Collected By** : MSV Analytical Laboratories, Bellary.
- Particulars of Sample Collected** : Sample collected with VSS - 1
- Date of Sample Receipt** : 07.08.2021
- Analysis Starting Date** : 08.08.2021
- Analysis Completion Date** : 09.08.2021
- Sample Tested as Received**

GENERAL DETAILS

Date of Monitoring	07.08.2021
Fuel Used	---
Stack Temperature (°C)	36
Velocity (m/s)	6.9
Height (m)	15mtrs AGL
Diameter (m)	0.7
Cross sectional area (m ²)	0.38465

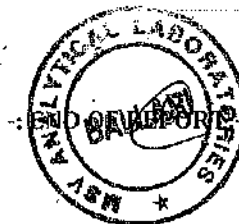
RESULTS

Parameters	Protocol	Unit	Result	GSR 277 (E) Standards
Particulate Matter	IS-11255(Part1) - 1985	mg/Nm ³	32.8	50
Sulphur dioxide	IS-11255(Part2) - 1985	mg/Nm ³	15.3	800
Nitrogen dioxide	IS-11255(Part7) - 2005	mg/Nm ³	11.6	500
Carbon Monoxide as(CO)	IS 13270	%	0.18	Max 1%

INFERENCE	As per KSPCB Standards Report Status :- The analyzed value for above measured parameter is within the limits.
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MSVAL/A/F/18/03

ANALYSIS REPORT FOR SOURCE EMISSION

Test Report No : TC720721000011434

Report Issued Date : 02.09.2021

1. Name of the Industry : M/s. The Sandur Manganese & Iron Ores Ltd.
(Metal & Ferro Alloys Plant)
Vysanakere, Hanumanahalli Village,
Hospet Taluk, Bellary District, Karnataka.
2. Stack ID : Coal Crushing Area
3. Sample Collected By : MSV Analytical Laboratories, Bellary.
4. Particulars of Sample Collected : Sample collected with VSS - 1
5. Date of Sample Receipt : 07.08.2021
6. Analysis Starting Date : 08.08.2021
7. Analysis Completion Date : 09.08.2021
8. Sample Tested as Received

GENERAL DETAILS

Date of Monitoring	07.08.2021
Fuel Used	---
Stack Temperature (°C)	37
Velocity (m/s)	6.4
Height (m)	15mtrs AGL
Diameter (m)	0.75
Cross sectional area (m ²)	0.44156

RESULTS

Parameters	Protocol	Unit	Result	GSR 277 (E) Standards
Particulate Matter	IS-11255(Part1) - 1985	mg/Nm ³	44.4	50
Sulphur dioxide	IS-11255(Part2) - 1985	mg/Nm ³	12.8	800
Nitrogen dioxide	IS-11255(Part7) - 2005	mg/Nm ³	10.5	500
Carbon Monoxide as(CO)	IS 13270	%	0.16	Max 1%

INFERENCE	As per KSPCB Standards Report Status :- The analyzed value for above measured parameter is within the limits.
-----------	--

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MSVAL/A/F/18/03

ANALYSIS REPORT FOR SOURCE EMISSION

Test Report No : TC720721000011435

Report Issued Date : 02.09.2021

- Name of the Industry : M/s. The Sandur Manganese & Iron Ores Ltd.
(Metal & Ferro Alloys Plant)
Vyasanakere, Hanumanahalli Village,
Hospet Taluk, Bellary District, Karnataka.
- Stack ID : Coke Oven Battery – Passes Through WHRB-1
- Sample Collected By : MSV Analytical Laboratories, Bellary.
- Particulars of Sample Collected : Sample collected with VSS – 1
- Date of Sample Receipt : 07.08.2021
- Analysis Starting Date : 08.08.2021
- Analysis Completion Date : 09.08.2021
- Sample Tested as Received

GENERAL DETAILS

Date of Monitoring	07.08.2021
Fuel Used	---
Stack Temperature (°C)	141
Velocity (m/s)	6.6
Height (m)	60 mtrs AGL
Diameter (m)	3.4
Cross sectional area (m ²)	9.0746

RESULTS

Parameters	Protocol	Unit	Result	GSR 277 (E) Standards
Particulate Matter	IS-11255(Part1) - 1985	mg/Nm ³	45.8	50
Sulphur dioxide	IS-11255(Part2) - 1985	mg/Nm ³	19.5	800
Nitrogen dioxide	IS-11255(Part7) - 2005	mg/Nm ³	13.7	500
Carbon Monoxide as(CO)	IS 13270	%	0.24	Max 1%

INFERENCE	As per GSR 277 (E) Standards. Report Status :- The analyzed value for above measured parameter is within the limits.
-----------	---

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Authorized Signature



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MSVAL/A/F/18/03

ANALYSIS REPORT FOR SOURCE EMISSION

Test Report No : TC720721000011436

Report Issued Date : 02.09.2021

- Name of the Industry : M/s. The Sandur Manganese & Iron Ores Ltd.
(Metal & Ferro Alloys Plant)
Vysanakere, Hanumanahalli Village,
Hospet Taluk, Bellary District, Karnataka.
- Stack ID : Ferro Alloy Arc Furnace
- Sample Collected By : MSV Analytical Laboratories, Bellary.
- Particulars of Sample Collected : Sample collected with VSS - 1
- Date of Sample Receipt : 07.08.2021
- Analysis Starting Date : 08.08.2021
- Analysis Completion Date : 09.08.2021
- Sample Tested as Received

GENERAL DETAILS

Date of Monitoring	07.08.2021
Fuel Used	----
Stack Temperature (°C)	141
Velocity (m/s)	6.6
Height (m)	35 mtrs AGL
Diameter (m)	2.5
Cross sectional area (m ²)	4.90625

RESULTS

Parameters	Protocol	Unit	Result	GSR 277 (E) Standards
Particulate Matter	IS-11255(Part1) - 1985	mg/Nm ³	60.6	150

INFERENCE	As per GSR 277 (E) Standards. Report Status :- The analyzed value for above measured parameter is within the limits.
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MSV Analytical Laboratories

Recognition by MoEF under Environment (Protection) Act, 1986 and Accredited by NABL

(Certified by ISO-14001-2015, ISO 22000-2018, ISO 45001-2018, ISO 9001-2015)

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MSVAL/A/F/18/03

ANALYSIS REPORT FOR SOURCE EMISSION

Test Report No : TC720721000011437

Report Issued Date : 02.09.2021

1. Name of the Industry : M/s. The Sandur Manganese & Iron Ores Ltd.
(Metal & Ferro Alloys Plant)
Vyasankere, Hanumanahalli Village,
Hospet Taluk, Bellary District, Karnataka.
2. Stack ID : Coke Oven Battery - Passes Through WHRB-2
3. Sample Collected By : MSV Analytical Laboratories, Bellary.
4. Particulars of Sample Collected : Sample collected with VSS - 1
5. Date of Sample Receipt : 07.08.2021
6. Analysis Starting Date : 08.08.2021
7. Analysis Completion Date : 09.08.2021
8. Sample Tested as Received

GENERAL DETAILS

Date of Monitoring	07.08.2021
Fuel Used	---
Stack Temperature (°C)	145
Velocity (m/s)	6.6
Height (m)	60 mtrs AGL
Diameter (m)	3.4
Cross sectional area (m ²)	9.0746

RESULTS

Parameters	Protocol	Unit	Result	GSR 277 (E) Standards
Particulate Matter	IS-11255(Part1) - 1985	mg/Nm ³	38.5	50
Sulphur dioxide	IS-11255(Part2) - 1985	mg/Nm ³	18.4	800
Nitrogen dioxide	IS-11255(Part7) - 2005	mg/Nm ³	13.3	500
Carbon Monoxide as(CO)	IS 13270	%	0.22	Max 1%

INFERENCE	As per GSR 277 (E) Standards. Report Status :- The analyzed value for above measured parameter is within the limits.
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Verified by

Authorized Signature



- Note : 1. The results listed only to the tested samples & applicable parameters,
2. Water samples will destroyed after 10days, Filter papers & Thimbles will be destroyed 3months from the date of issue of test certificate unless otherwise specified. ILC sample will be destroyed after 1 month from the date of test certificate issue.
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