

# The Sandur Manganese & Iron Ores Limited

(An ISO 9001:2015; ISO 14001:2015 and 45001:2018 certified company)  
CIN: L85110KA1954PLC000759; Website: www.sandurgroup.com

## REGISTERED OFFICE

'SATYALAYA', No.266  
Ward No.1, Palace Road  
Sandur - 583 119, Ballari District  
Karnataka, India  
Tel: +91 8395 260301/ 283173-199  
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## CORPORATE OFFICE

'SANDUR HOUSE', No.9  
Bellary Road, Sadashivanagar  
Bengaluru - 560 080  
Karnataka, India  
Tel: +91 80 4152 0176 - 79 / 4547 3000  
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Ref No: SMIORE/PLANT/ENV/MR/2023-24/137

05.02.2024

To,  
The Environmental Officer,  
Regional Office & Zonal office  
Karnataka State Pollution Control Board  
Sri Sai Sharan plaza, No. 71/A, 2nd floor,  
Dam road, Hosapete- 583203, Vijayanagar District.

**Subject:** Submission of monthly environmental monitoring report for the month of January-2024.

**Reference:** 1) CFO No. AW-329576 PCB ID 29470 Dated 02.02.2022  
2) Amended CFO No. AW-335581 PCB ID 29470 Dated 17.01.2023

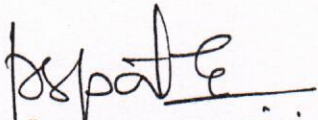
Dear Sir,

With reference to the subject cited above, please find here with Environmental Monitoring reports of M/s The Sandur Manganese & Iron Ores Limited, Vyasankere, Hanumanahalli Post, 583222, Hosapete Taluk, Vijayanagara District., for the Period January-2024 for your kind perusal.

Kindly acknowledge receipt of the same.

Thanking you,

For The Sandur Manganese & Iron Ores Limited,

  
Parvatareddy Patil  
Senior General Manager-Plant



ಸ್ವೀಕೃತಿ  
ಕ.ರಾ.ಮಾ.ನಿ. ಮಂಡಳಿ  
ಪ್ರಾದೇಶಿಕ ಕಛೇರಿ ವಿಜಯನಗರ ಹೊಸಪೇಟೆ  
ಸಂಖ್ಯೆ/ದಿನಾಂಕ: 12/2/24 ಸಹಿ

**Encl:** Environmental Monitoring Report January-2024

**MINES OFFICE:** Deogiri - 583112, Sandur Taluk, Ballari District  
Tel: +91 8395 271025 / 28 / 29 / 40; Fax: +91 8395 271066

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

# ENVIRONMENTAL MONITORING REPORT

January, 2024

**Project : The Sandur Manganese & Iron Ores Ltd.**  
**(Metal & Ferro Alloys Plant),**  
**Vyasanakere, Hanumanahalli Village,**  
**Hospet Taluk,**

## CONSULTANT

**MINERAL ENGINEERING SERVICES**  
(Accredited by QCI-NABET ORG000756)  
25/XXV, Club Road, BELLARY-583103,  
Karnataka, Tel 08392-267421, Mob:  
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**ENVIRONMENTAL LABORATORY**  
**Unit of Mineral Engineering Services)**  
(Accredited by NABL &, MOEF&CC Under  
E(P) 1986)  
#948, 2<sup>nd</sup> Cross, Kammanahalli Main  
Road, St Thomas Town Post, Bangalore-  
560 084, Karnataka,

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# ENVIRONMENTAL LABORATORY

(UNIT OF MINERAL ENGINEERING SERVICES)

Recognised by BIS, FSSAI, ISO:45001:2018 Certified Laboratory

Recognised by MoEFCC(CPCB) under E(P) Act 1986 recognition valid upto 23.05.2025



## TEST REPORT

Table No. 1

### AMBIENT AIR QUALITY

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd.  
(Metal & Ferro Alloys Plant),  
Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,

Sample Collected by : Environmental Laboratory Representative

Station at & Code : A1, Near Existing AAQMS 01 (SMIORE Schools)

Duration : 24 Hrs

Issue date : 01.02.2024

Reference IS 5182 & Lab SOP

Date of Sampling	Lab Code	Sulphur Dioxide (SO <sub>2</sub> ), µg/m <sup>3</sup>	Nitrogen Dioxide (NO <sub>2</sub> ), µg/m <sup>3</sup>	PM <sub>10</sub> , (µg/m <sup>3</sup> )	PM <sub>2.5</sub> , (µg/m <sup>3</sup> )	Ammonia (NH <sub>3</sub> ), µg/m <sup>3</sup>	Benzene (C <sub>6</sub> H <sub>6</sub> ), µg/m <sup>3</sup>
01.01.2024	N/24/01/1-0006	10	14	55	32	<20	<1
02.01.2024	N/24/01/1-0018	11	16	59	31	<20	<1
12.01.2024	N/24/01/3-0189	11	12	45	23	<20	<1
13.01.2024	N/24/01/3-0215	9	10	48	26	<20	<1
16.01.2024	N/24/01/4-0044	10	11	50	28	<20	<1
17.01.2024	N/24/01/4-0056	12	14	56	32	<20	<1
22.01.2024	N/24/01/4-217	12	14	53	24	<20	<1
23.01.2024	N/24/01/4-263	9	10	58	32	<20	<1
<b>Limits for Industrial , Residential, Rural and other Areas</b>		<b>80</b> 24 Hrs	<b>80</b> 24 Hrs	<b>100</b> 24 Hrs	<b>60</b> 24 Hrs	<b>400</b> 24 Hrs	<b>5</b> Annual

Date of Sampling	Lab Code	Lead (Pb), µg/m <sup>3</sup>	Nickel (Ni), ng/m <sup>3</sup>	Arsenic (As), ng/m <sup>3</sup>	Benzo(a) Pyrene (BaP), ng/m <sup>3</sup>	Carbon Monoxide* (CO), mg/m <sup>3</sup>	Ozone* (O <sub>3</sub> ), µg/m <sup>3</sup>
01.01.2024	N/24/01/1-0006	0.18	<0.1	<0.5	<0.5	0.34	28
02.01.2024	N/24/01/1-0018	0.11	<0.1	<0.5	<0.5	0.28	25
12.01.2024	N/24/01/3-0189	0.23	<0.1	<0.5	<0.5	0.23	26
13.01.2024	N/24/01/3-0215	0.16	<0.1	<0.5	<0.5	0.33	22
16.01.2024	N/24/01/4-0044	0.17	<0.1	<0.5	<0.5	0.30	21
17.01.2024	N/24/01/4-0056	0.13	<0.1	<0.5	<0.5	0.26	24
22.01.2024	N/24/01/4-217	<0.1	<0.1	<0.5	<0.5	0.22	23
23.01.2024	N/24/01/4-263	0.18	<0.1	<0.5	<0.5	0.25	27
<b>Limits for Industrial , Residential, Rural and other Areas</b>		<b>1.0</b> 24 Hrs	<b>20</b> Annual	<b>6</b> Annual	<b>1</b> Annual	<b>4</b> 1 Hr	<b>180</b> 1 Hr

Note : \* Parameters monitored for period of 1 hr

*Arshiya Kousar*  
ARSHIYA KOUSAR  
Dy. T.M. - Chemical

Govt. Analyst / Authorised Signatory

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## TEST REPORT

Table No. 2

### AMBIENT AIR QUALITY

<b>Name and Address of the Industry :</b> Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,							
<b>Sample Collected by :</b> Environmental Laboratory Representative							
<b>Station at &amp; Code :</b> A2, Existing Water Reservoir (Near WTP Plant)							
<b>Duration :</b> 24 Hrs							
<b>Issue date :</b> 01.02.2024							
<b>Reference</b> IS 5182 & Lab SOP							
Date of Sampling	Lab Code	Sulphur Dioxide (SO <sub>2</sub> ), µg/m <sup>3</sup>	Nitrogen Dioxide (NO <sub>2</sub> ), µg/m <sup>3</sup>	PM <sub>10</sub> , (µg/m <sup>3</sup> )	PM <sub>2.5</sub> , (µg/m <sup>3</sup> )	Ammonia (NH <sub>3</sub> ), µg/m <sup>3</sup>	Benzene (C <sub>6</sub> H <sub>6</sub> ), µg/m <sup>3</sup>
01.01.2024	N/24/01/1-0007	10	13	32	20	<20	<1
02.01.2024	N/24/01/1-0019	8	11	35	22	<20	<1
12.01.2024	N/24/01/3-0190	10	12	40	24	<20	<1
13.01.2024	N/24/01/3-0216	11	14	52	29	<20	<1
16.01.2024	N/24/01/4-0045	9	10	53	27	<20	<1
17.01.2024	N/24/01/4-0057	11	14	54	30	<20	<1
22.01.2024	N/24/01/4-218	10	12	56	28	<20	<1
23.01.2024	N/24/01/4-264	11	15	48	26	<20	<1
<b>Limits for Industrial , Residential, Rural and other Areas</b>		<b>80</b> 24 Hrs	<b>80</b> 24 Hrs	<b>100</b> 24 Hrs	<b>60</b> 24 Hrs	<b>400</b> 24 Hrs	<b>5</b> Annual

Date of Sampling	Lab Code	Lead (Pb), µg/m <sup>3</sup>	Nickel (Ni), ng/m <sup>3</sup>	Arsenic (As), ng/m <sup>3</sup>	Benzo(a) Pyrene (BaP), ng/m <sup>3</sup>	Carbon Monoxide* (CO), mg/m <sup>3</sup>	Ozone* (O <sub>3</sub> ), µg/m <sup>3</sup>
01.01.2024	N/24/01/1-0007	0.16	<0.1	<0.5	<0.5	0.20	25
02.01.2024	N/24/01/1-0019	0.21	<0.1	<0.5	<0.5	0.28	23
12.01.2024	N/24/01/3-0190	0.18	<0.1	<0.5	<0.5	0.35	28
13.01.2024	N/24/01/3-0216	0.25	<0.1	<0.5	<0.5	0.27	27
16.01.2024	N/24/01/4-0045	0.19	<0.1	<0.5	<0.5	0.22	27
17.01.2024	N/24/01/4-0057	0.22	<0.1	<0.5	<0.5	0.31	25
22.01.2024	N/24/01/4-218	0.12	<0.1	<0.5	<0.5	0.23	23
23.01.2024	N/24/01/4-264	0.17	<0.1	<0.5	<0.5	0.27	25
<b>Limits for Industrial , Residential, Rural and other Areas</b>		<b>1.0</b> 24 Hrs	<b>20</b> Annual	<b>6</b> Annual	<b>1</b> Annual	<b>4</b> 1 Hr	<b>180</b> 1 Hr

**Note :** \* Parameters monitored for period of 1 hr

*Arshiya Kousar*  
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## TEST REPORT

Table No. 3

### AMBIENT AIR QUALITY

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,							
Sample Collected by : Environmental Laboratory Representative							
Station at & Code : A3, Galemmanagudi							
Duration : 24 Hrs							
Issue date : 01.02.2024							
Reference IS 5182 & Lab SOP							
Date of Sampling	Lab Code	Sulphur Dioxide (SO <sub>2</sub> ), µg/m <sup>3</sup>	Nitrogen Dioxide (NO <sub>2</sub> ), µg/m <sup>3</sup>	PM <sub>10</sub> , (µg/m <sup>3</sup> )	PM <sub>2.5</sub> , (µg/m <sup>3</sup> )	Ammonia (NH <sub>3</sub> ), µg/m <sup>3</sup>	Benzene (C <sub>6</sub> H <sub>6</sub> ), µg/m <sup>3</sup>
01.01.2024	N/24/01/1-0008	11	12	56	34	<20	<1
02.01.2024	N/24/01/1-0020	12	14	48	29	<20	<1
12.01.2024	N/24/01/3-0191	10	11	50	27	<20	<1
13.01.2024	N/24/01/3-0217	12	16	49	23	<20	<1
16.01.2024	N/24/01/4-0046	12	15	53	25	<20	<1
17.01.2024	N/24/01/4-0058	9	12	55	28	<20	<1
22.01.2024	N/24/01/4-219	8	11	49	23	<20	<1
23.01.2024	N/24/01/4-265	10	13	43	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	Lab Code	Lead (Pb), µg/m <sup>3</sup>	Nickel (Ni), ng/m <sup>3</sup>	Arsenic (As), ng/m <sup>3</sup>	Benzo(a) Pyrene (BaP), ng/m <sup>3</sup>	Carbon Monoxide* (CO), mg/m <sup>3</sup>	Ozone* (O <sub>3</sub> ), µg/m <sup>3</sup>
01.01.2024	N/24/01/1-0008	0.22	<0.1	<0.5	<0.5	0.30	22
02.01.2024	N/24/01/1-0020	0.16	<0.1	<0.5	<0.5	0.20	25
12.01.2024	N/24/01/3-0191	0.21	<0.1	<0.5	<0.5	0.35	28
13.01.2024	N/24/01/3-0217	<0.1	<0.1	<0.5	<0.5	0.21	24
16.01.2024	N/24/01/4-0046	0.11	<0.1	<0.5	<0.5	0.22	25
17.01.2024	N/24/01/4-0058	0.16	<0.1	<0.5	<0.5	0.25	27
22.01.2024	N/24/01/4-219	0.18	<0.1	<0.5	<0.5	0.20	22
23.01.2024	N/24/01/4-265	0.10	<0.1	<0.5	<0.5	0.23	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

*Arshiy Kousar*  
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## TEST REPORT

Table No. 4

### AMBIENT AIR QUALITY

Name and Address of the Industry : M/s. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,							
Sample Collected by : Environmental Laboratory Representative							
Station at & Code : A4, Near Plant Railway Siding							
Duration : 24 Hrs							
Issue date : 01.02.2024							
Reference : IS 5182 & Lab SOP							
Date of Sampling	Lab Code	Sulphur Dioxide (SO <sub>2</sub> ), µg/m <sup>3</sup>	Nitrogen Dioxide (NO <sub>2</sub> ), µg/m <sup>3</sup>	PM <sub>10</sub> , (µg/m <sup>3</sup> )	PM <sub>2.5</sub> , (µg/m <sup>3</sup> )	Ammonia (NH <sub>3</sub> ), µg/m <sup>3</sup>	Benzene (C <sub>6</sub> H <sub>6</sub> ), µg/m <sup>3</sup>
01.01.2024	N/24/01/1-0009	11	15	50	29	<20	<1
02.01.2024	N/24/01/1-0021	10	16	45	25	<20	<1
12.01.2024	N/24/01/3-0192	11	13	43	24	<20	<1
13.01.2024	N/24/01/3-0218	12	16	58	32	<20	<1
16.01.2024	N/24/01/4-0047	13	15	47	23	<20	<1
17.01.2024	N/24/01/4-0059	11	13	56	27	<20	<1
22.01.2024	N/24/01/4-220	11	12	51	28	<20	<1
23.01.2024	N/24/01/4-266	12	16	54	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	Lab Code	Lead (Pb), µg/m <sup>3</sup>	Nickel (Ni), ng/m <sup>3</sup>	Arsenic (As), ng/m <sup>3</sup>	Benzo(a) Pyrene (BaP), ng/m <sup>3</sup>	Carbon Monoxide* (CO), mg/m <sup>3</sup>	Ozone* (O <sub>3</sub> ), µg/m <sup>3</sup>
01.01.2024	N/24/01/1-0009	0.11	<0.1	<0.5	<0.5	0.26	24
02.01.2024	N/24/01/1-0021	0.13	<0.1	<0.5	<0.5	0.28	27
12.01.2024	N/24/01/3-0192	0.15	<0.1	<0.5	<0.5	0.29	25
13.01.2024	N/24/01/3-0218	0.18	<0.1	<0.5	<0.5	0.31	27
16.01.2024	N/24/01/4-0047	0.19	<0.1	<0.5	<0.5	0.24	23
17.01.2024	N/24/01/4-0059	0.15	<0.1	<0.5	<0.5	0.29	24
22.01.2024	N/24/01/4-220	0.22	<0.1	<0.5	<0.5	0.33	25
23.01.2024	N/24/01/4-266	0.15	<0.1	<0.5	<0.5	0.23	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

*Arshiya Kousar*  
ARSHIYA KOUSAR  
Dy. T.M. - Chemical

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## TEST REPORT

Table No. 5

### Stack Monitoring Report

Report No. : N019324013

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,	
Location	: ARC Furnace area
Stack ID	: Stack Attached to Furnace - 3
Sample Collected by	: Environmental Laboratory Representative
Date of Collection	: 12.01.2024
Particulars of Sample Collected	: Emissions from stack collected through stack sample VSS1
Date of Sample Receipt	: 13.01.2024
Lab Code	: N/24/01/3-0193
Issue date	: 01.02.2024

#### STACK DETAILS

1	Fuel Used	-
2	Ambient Temperature ( $^{\circ}\text{C}$ )	26
3	Stack Temperature ( $^{\circ}\text{C}$ )	110
4	Velocity (m/s)	7.72
5	Stack Height (M)	35
6	Stack Diameter (M)	2.5
7	Cross Sectional Area in meter square ( $\text{m}^2$ )	4.9109
8	Quantity of flue Gas Discharged into atmosphere ( $\text{Nm}^3/\text{hr}$ )	96703
9	Sample Condition When Received	Satisfactory
10	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
11	Serial No. of the Equipment	338 DTH 14
12	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024

#### Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012	Test Method
1	Particulate Matter	$\text{mg}/\text{Nm}^3$	34.86	150	IS: 11255(Part-1) 2014
2	Sulphur Dioxide ( $\text{SO}_2$ ),	$\text{mg}/\text{Nm}^3$	22.00	--	IS: 11255(Part-2) 2014
3	Nitrogen Dioxide ( $\text{NO}_2$ )	$\text{mg}/\text{Nm}^3$	30.62	--	IS: 11255(Part-7) 2017
4	CO	%	0.32	--	flue gas analyser
5	Oxygen ( $\text{O}_2$ )	%	16.88	--	flue gas analyser

*Arshiya Kousar*  
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## TEST REPORT

Table No. 6

### Stack Monitoring Report

Report No. : N019424013

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,	
Location	: Coke Oven Plant
Stack ID	: Stack Attached to WHRB -01
Sample Collected by	: Environmental Laboratory Representative
Date of Collection	: 12.01.2024
Particulars of Sample Collected	: Emissions from stack collected through stack sample VSS1
Date of Sample Receipt	: 13.01.2024
Lab Code	: N/24/01/3-0194
Issue date	: 01.02.2024

#### STACK DETAILS

1	Fuel Used	-
2	Ambient Temperature (°C)	26
3	Stack Temperature (°C)	260
4	Velocity (m/s)	9.59
5	Stack Height (M)	60
6	Stack Diameter (M)	4.6
7	Cross Sectional Area in meter square (m <sup>2</sup> )	16.62647
8	Quantity of flue Gas Discharged into atmosphere (Nm <sup>3</sup> /hr)	291348
9	Sample Condition When Received	Satisfactory
10	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
11	Serial No. of the Equipment	338 DTH 14
12	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024

#### Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012	Test Method
1	Particulate Matter	mg/Nm <sup>3</sup>	42.52	50	IS: 11255(Part-1) 2014
2	Sulphur Dioxide (SO <sub>2</sub> ),	mg/Nm <sup>3</sup>	66.32	800	IS: 11255(Part-2) 2014
3	Nitrogen Dioxide (NO <sub>2</sub> )	mg/Nm <sup>3</sup>	55.20	500	IS: 11255(Part-7) 2017
4	CO	%	0.51	Max1%	flue gas analyser
5	Oxygen (O <sub>2</sub> )	%	18.72	--	flue gas analyser

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## TEST REPORT

Table No. 7

### Stack Monitoring Report

Report No. : N021924013

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,	
Location	: Coke Oven Plant
Stack ID	: Stack Attached to WHRB -02
Sample Collected by	: Environmental Laboratory Representative
Date of Collection	: 13.01.2024
Particulars of Sample Collected	: Emissions from stack collected through stack sample VSS1
Date of Sample Receipt	: 15.01.2024
Lab Code	: N/24/01/3-0219
Issue date	: 01.02.2024

#### STACK DETAILS

1	Fuel Used	-
2	Ambient Temperature (°C)	26
3	Stack Temperature (°C)	220
4	Velocity (m/s)	8.64
5	Stack Height (M)	60
6	Stack Diameter (M)	4.6
7	Cross Sectional Area in meter square (m <sup>2</sup> )	16.62647
8	Quantity of flue Gas Discharged into atmosphere (Nm <sup>3</sup> /hr)	280222.0
9	Sample Condition When Received	Satisfactory
10	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
11	Serial No. of the Equipment	338 DTH 14
12	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024

#### Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012	Test Method
1	Particulate Matter	mg/Nm <sup>3</sup>	38.26	50	IS: 11255(Part-1) 2014
2	Sulphur Dioxide (SO <sub>2</sub> ),	mg/Nm <sup>3</sup>	68.20	800	IS: 11255(Part-2) 2014
3	Nitrogen Dioxide (NO <sub>2</sub> )	mg/Nm <sup>3</sup>	56.52	500	IS: 11255(Part-7) 2017
4	CO	%	0.38	Max1%	flue gas analyser
5	Oxygen (O <sub>2</sub> )	%	6.30	--	flue gas analyser

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## TEST REPORT

Table No. 8

### Stack Monitoring Report

Report No. : N022024013

<b>Name and Address of the Industry :</b> Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,	
<b>Location</b>	: Coke Oven Plant
<b>Stack ID</b>	: Stack Attached to Coal Crushing
<b>Sample Collected by</b>	: Environmental Laboratory Representative
<b>Date of Collection</b>	: 13.01.2024
<b>Particulars of Sample Collected</b>	: Emissions from stack collected through stack sample VSS1
<b>Date of Sample Receipt</b>	: 17.01.2024
<b>Lab Code</b>	: N/24/01/3-0220
<b>Issue date</b>	: 01.02.2024

#### STACK DETAILS

1	Fuel Used	-
2	Ambient Temperature ( $^{\circ}$ C)	26
3	Stack Temperature ( $^{\circ}$ C)	64
4	Velocity (m/s)	6.86
5	Stack Height (M)	15
6	Stack Diameter (M)	0.8
7	Cross Sectional Area in meter square ( $m^2$ )	0.4419
8	Quantity of flue Gas Discharged into atmosphere ( $Nm^3/hr$ )	9962
9	Sample Condition When Received	Satisfactory
10	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
11	Serial No. of the Equipment	338 DTH 14
12	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024

#### Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012	Test Method
1	Particulate Matter	mg/ $Nm^3$	25.32	50	IS: 11255(Part-1) 2014

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## TEST REPORT

Table No. 9

### Stack Monitoring Report

Report No. : N006024014

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,	
Location	: Coke Oven Plant
Stack ID	: Stack Attached to Coke Cutter
Sample Collected by	: Environmental Laboratory Representative
Date of Collection	: 17.01.2024
Particulars of Sample Collected	: Emissions from stack collected through stack sample VSS1
Date of Sample Receipt	: 20.01.2024
Lab Code	: N/24/01/4-0060
Issue date	: 01.02.2024

#### STACK DETAILS

1	Fuel Used	-
2	Ambient Temperature (°C)	26
3	Stack Temperature (°C)	52
4	Velocity (m/s)	6.47
5	Stack Height (M)	15
6	Stack Diameter (M)	0.7
7	Cross Sectional Area in meter square (m <sup>2</sup> )	0.3850
8	Quantity of flue Gas Discharged into atmosphere (Nm <sup>3</sup> /hr)	7461
9	Sample Condition When Received	Satisfactory
10	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
11	Serial No. of the Equipment	338 DTH 14
12	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024

#### Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012	Test Method
1	Particulate Matter	mg/Nm <sup>3</sup>	29.21	50	IS: 11255(Part-1) 2014

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## TEST REPORT

Table No. 10

### Stack Monitoring Report

Report No. : N006124014

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,	
Location	: Coke Oven Plant
Stack ID	: Stack Attached to Coke Screening & Store
Sample Collected by	: Environmental Laboratory Representative
Date of Collection	: 17.01.2024
Particulars of Sample Collected	: Emissions from stack collected through stack sample VSS1
Date of Sample Receipt	: 20.01.2024
Lab Code	: N/24/01/4-0061
Issue date	: 01.02.2024

#### STACK DETAILS

1	Fuel Used	-
2	Ambient Temperature ( $^{\circ}$ C)	26
3	Stack Temperature ( $^{\circ}$ C)	56
4	Velocity (m/s)	6.06
5	Stack Height (M)	15
6	Stack Diameter (M)	0.7
7	Cross Sectional Area in meter square ( $m^2$ )	0.3850
8	Quantity of flue Gas Discharged into atmosphere ( $Nm^3/hr$ )	6909
9	Sample Condition When Received	Satisfactory
10	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
11	Serial No. of the Equipment	338 DTH 14
12	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024

#### Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012	Test Method
1	Particulate Matter	mg/ $Nm^3$	32.12	50	IS: 11255(Part-1) 2014

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## TEST REPORT

Table No. 11

### AMBIENT NOISE LEVEL DATA

<b>Name and Address of the Industry :</b> Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,							
<b>Particulars of Sample Collected :</b> Ambient Noise Level collected through Sound Level Meter (HTC SL-1352 Data Logger)							
<b>Sample Collected by :</b> Environmental Laboratory Representative							
<b>Date of sample collection :</b> 16.01.2024							
<b>Date of sample receipt :</b> 17.01.2024							
<b>Issue Date :</b> 01.02.2024							
<b>Sampling &amp; Test Method :</b> IS:9989							
Code No.	Monitoring stations	Day			Night		
		(06.00 Am to 10.00 Pm)			(10.00 Pm to 06.00 Am)		
		L <sub>min</sub>	L <sub>eq</sub>	L <sub>max</sub>	L <sub>min</sub>	L <sub>eq</sub>	L <sub>max</sub>
<b>Core zone</b>							
N1	Near Existing AAQMS 01 (SMIORE Schools)	40.0	51.4	59.6	35.2	43.0	49.5
N2	Existing Water Reservoir (Near WTP Plant)	37.0	53.7	60.3	34.8	43.1	47.6
<b>Buffer zone</b>							
N3	Galemmanagudi	37.3	50.7	58.0	34.0	43.0	48.3
N4	Vysanakere Village	39.3	50.9	57.2	34.0	44.6	46.8
N5	Hanumanhalli	37.5	50.9	56.8	36.0	43.7	48.1
<b><u>Permissible Limits of Ambient Noise Levels as per CPCB Guidelines</u></b>							
<b>Leq. Limit dB(A)</b>							
		<b>Day</b>		<b>Night</b>			
Industrial areas		75		70			
Commercial area		65		55			
Residential area		55		45			

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## TEST REPORT

Table No.12

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasankere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,					
Sample Collected by : Environmental Laboratory Representative					
Particulars of sample collected : SW1 - Tungabhadra Dam water SW2 - Plant Reservoir					
Date of sample collection : 13.01.2024					
Date of sample receipt : 16.01.2024					
Issue Date : 25.01.2024					
Ref:IS : 2296, 1982 Class C Norms (Stream Water Standards)					
Lab Code	N/24/01/3-0009	N/24/01/3-0010	Limits For Stream Water Standards	Method of Testing	
Sample Code	SW1	SW2			
Sl.No	Parameters	Results			
1	Colour (Hazen Units), Max	10	15	300	IS:3025(Part-4)2021
2	pH	8.11	8.26	6.5 to 8.5	IS:3025(Part-11)2022
3	Dissolved Oxygen (as O <sub>2</sub> ), mg/l, Max	5.6	5.4	Min 4	IS:3025(Part-38)1989RA 2019
4	Oil & Grease, mg/l	<0.1	<0.1	0.1	IS:3025(Part 39)2021
5	Total Dissolved Solids (mg/l), Max	152	250	1500	IS:3025(Part-16)2023
6	Nitrates (as NO <sub>3</sub> ),mg/l, Max	0.86	1.20	50	IS:3025(Part-34)1988 RA 2019
7	Anionic detergents (as MBAS),mg/l, Max	<0.1	<0.1	1.0	IS:3025(Part-68)
8	Copper (as Cu),mg/l, Max	<0.005	<0.005	1.5	IS:3025(Part-2) 2019
9	Chloride (as Cl),mg/l, Max	31.99	62.98	600	IS:3025(Part-32)-1988RA2019
10	Fluoride (as F),mg/l, Max	0.15	0.38	1.5	APHA 23rd Edition 4500F
11	Iron (as Fe),mg/l, Max	0.0026	0.03	50	IS:3025(P-2) 2019
12	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH),mg/l, Max	<0.001	<0.001	0.005	IS:3025(P-43)Sec 1 2022
13	Selenium (as Se), mg/l, Max	<0.005	<0.005	0.05	IS:3025(P-2) 2019
14	Sulphates as SO <sub>4</sub> (mg/l), Max	21.3	38.4	400	IS:3025(P-24)Sec 1 2022
15	Zinc (as Zn),mg/l, Max	0.058	0.071	15	IS:3025(P-2) 2019
16	Cadmium (as Cd), mg/l, Max	<0.001	<0.001	0.01	IS:3025(P-2) 2019
17	Cyanides (as CN), mg/l, Max	<0.01	<0.01	0.05	IS:3025(P-27) Sec 1 2021
18	Lead (as Pb) mg/l, Max	<0.005	<0.005	0.1	IS:3025(P-2) 2019
19	Total Arsenic as As (mg/l), Max	<0.002	<0.002	0.2	IS:3025(P-2) 2019
20	Hexavalent Chromium (as Cr <sup>+6</sup> ), mg/l, Max	<0.03	<0.03	0.05	IS:3025(P-52) 2014
21	Biochemical Oxygen Demand (as O <sub>2</sub> ), mg/l	<3.0	<3.0	3	IS:3025(P-44) 2014
22	Total Coliform (mpn/100ml)	38	64	5000	IS:1622:1981

"END OF REPORT"

  
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# ENVIRONMENTAL MONITORING REPORT

January, 2024

**Project : The Sandur Manganese & Iron Ores Ltd.**  
**(Metal & Ferro Alloys Plant),**  
**Vyasanakere, Hanumanahalli Village,**  
**Hospet Taluk,**

## CONSULTANT

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## TEST REPORT

Table No. 1

### AMBIENT AIR QUALITY

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd.  
(Metal & Ferro Alloys Plant),  
Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,

Sample Collected by : Environmental Laboratory Representative

Station at & Code : A1, Near Existing AAQMS 01 (SMIORE Schools)

Duration : 24 Hrs

Issue date : 01.02.2024

Reference IS 5182 & Lab SOP

Date of Sampling	Lab Code	Sulphur Dioxide (SO <sub>2</sub> ), µg/m <sup>3</sup>	Nitrogen Dioxide (NO <sub>2</sub> ), µg/m <sup>3</sup>	PM <sub>10</sub> , (µg/m <sup>3</sup> )	PM <sub>2.5</sub> , (µg/m <sup>3</sup> )	Ammonia (NH <sub>3</sub> ), µg/m <sup>3</sup>	Benzene (C <sub>6</sub> H <sub>6</sub> ), µg/m <sup>3</sup>
01.01.2024	N/24/01/1-0006	10	14	55	32	<20	<1
02.01.2024	N/24/01/1-0018	11	16	59	31	<20	<1
12.01.2024	N/24/01/3-0189	11	12	45	23	<20	<1
13.01.2024	N/24/01/3-0215	9	10	48	26	<20	<1
16.01.2024	N/24/01/4-0044	10	11	50	28	<20	<1
17.01.2024	N/24/01/4-0056	12	14	56	32	<20	<1
22.01.2024	N/24/01/4-217	12	14	53	24	<20	<1
23.01.2024	N/24/01/4-263	9	10	58	32	<20	<1
<b>Limits for Industrial , Residential, Rural and other Areas</b>		<b>80</b> 24 Hrs	<b>80</b> 24 Hrs	<b>100</b> 24 Hrs	<b>60</b> 24 Hrs	<b>400</b> 24 Hrs	<b>5</b> Annual

Date of Sampling	Lab Code	Lead (Pb), µg/m <sup>3</sup>	Nickel (Ni), ng/m <sup>3</sup>	Arsenic (As), ng/m <sup>3</sup>	Benzo(a) Pyrene (BaP), ng/m <sup>3</sup>	Carbon Monoxide* (CO), mg/m <sup>3</sup>	Ozone* (O <sub>3</sub> ), µg/m <sup>3</sup>
01.01.2024	N/24/01/1-0006	0.18	<0.1	<0.5	<0.5	0.34	28
02.01.2024	N/24/01/1-0018	0.11	<0.1	<0.5	<0.5	0.28	25
12.01.2024	N/24/01/3-0189	0.23	<0.1	<0.5	<0.5	0.23	26
13.01.2024	N/24/01/3-0215	0.16	<0.1	<0.5	<0.5	0.33	22
16.01.2024	N/24/01/4-0044	0.17	<0.1	<0.5	<0.5	0.30	21
17.01.2024	N/24/01/4-0056	0.13	<0.1	<0.5	<0.5	0.26	24
22.01.2024	N/24/01/4-217	<0.1	<0.1	<0.5	<0.5	0.22	23
23.01.2024	N/24/01/4-263	0.18	<0.1	<0.5	<0.5	0.25	27
<b>Limits for Industrial , Residential, Rural and other Areas</b>		<b>1.0</b> 24 Hrs	<b>20</b> Annual	<b>6</b> Annual	<b>1</b> Annual	<b>4</b> 1 Hr	<b>180</b> 1 Hr

Note : \* Parameters monitored for period of 1 hr

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## TEST REPORT

Table No. 2

### AMBIENT AIR QUALITY

<b>Name and Address of the Industry :</b> Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,							
<b>Sample Collected by :</b> Environmental Laboratory Representative							
<b>Station at &amp; Code :</b> A2, Existing Water Reservoir (Near WTP Plant)							
<b>Duration :</b> 24 Hrs							
<b>Issue date :</b> 01.02.2024							
<b>Reference</b> IS 5182 & Lab SOP							
Date of Sampling	Lab Code	Sulphur Dioxide (SO <sub>2</sub> ), µg/m <sup>3</sup>	Nitrogen Dioxide (NO <sub>2</sub> ), µg/m <sup>3</sup>	PM <sub>10</sub> , (µg/m <sup>3</sup> )	PM <sub>2.5</sub> , (µg/m <sup>3</sup> )	Ammonia (NH <sub>3</sub> ), µg/m <sup>3</sup>	Benzene (C <sub>6</sub> H <sub>6</sub> ), µg/m <sup>3</sup>
01.01.2024	N/24/01/1-0007	10	13	32	20	<20	<1
02.01.2024	N/24/01/1-0019	8	11	35	22	<20	<1
12.01.2024	N/24/01/3-0190	10	12	40	24	<20	<1
13.01.2024	N/24/01/3-0216	11	14	52	29	<20	<1
16.01.2024	N/24/01/4-0045	9	10	53	27	<20	<1
17.01.2024	N/24/01/4-0057	11	14	54	30	<20	<1
22.01.2024	N/24/01/4-218	10	12	56	28	<20	<1
23.01.2024	N/24/01/4-264	11	15	48	26	<20	<1
<b>Limits for Industrial , Residential, Rural and other Areas</b>		<b>80</b> 24 Hrs	<b>80</b> 24 Hrs	<b>100</b> 24 Hrs	<b>60</b> 24 Hrs	<b>400</b> 24 Hrs	<b>5</b> Annual

Date of Sampling	Lab Code	Lead (Pb), µg/m <sup>3</sup>	Nickel (Ni), ng/m <sup>3</sup>	Arsenic (As), ng/m <sup>3</sup>	Benzo(a) Pyrene (BaP), ng/m <sup>3</sup>	Carbon Monoxide* (CO), mg/m <sup>3</sup>	Ozone* (O <sub>3</sub> ), µg/m <sup>3</sup>
01.01.2024	N/24/01/1-0007	0.16	<0.1	<0.5	<0.5	0.20	25
02.01.2024	N/24/01/1-0019	0.21	<0.1	<0.5	<0.5	0.28	23
12.01.2024	N/24/01/3-0190	0.18	<0.1	<0.5	<0.5	0.35	28
13.01.2024	N/24/01/3-0216	0.25	<0.1	<0.5	<0.5	0.27	27
16.01.2024	N/24/01/4-0045	0.19	<0.1	<0.5	<0.5	0.22	27
17.01.2024	N/24/01/4-0057	0.22	<0.1	<0.5	<0.5	0.31	25
22.01.2024	N/24/01/4-218	0.12	<0.1	<0.5	<0.5	0.23	23
23.01.2024	N/24/01/4-264	0.17	<0.1	<0.5	<0.5	0.27	25
<b>Limits for Industrial , Residential, Rural and other Areas</b>		<b>1.0</b> 24 Hrs	<b>20</b> Annual	<b>6</b> Annual	<b>1</b> Annual	<b>4</b> 1 Hr	<b>180</b> 1 Hr

**Note :** \* Parameters monitored for period of 1 hr

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## TEST REPORT

Table No. 3

### AMBIENT AIR QUALITY

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,							
Sample Collected by : Environmental Laboratory Representative							
Station at & Code : A3, Galemmanagudi							
Duration : 24 Hrs							
Issue date : 01.02.2024							
Reference IS 5182 & Lab SOP							
Date of Sampling	Lab Code	Sulphur Dioxide (SO <sub>2</sub> ), µg/m <sup>3</sup>	Nitrogen Dioxide (NO <sub>2</sub> ), µg/m <sup>3</sup>	PM <sub>10</sub> , (µg/m <sup>3</sup> )	PM <sub>2.5</sub> , (µg/m <sup>3</sup> )	Ammonia (NH <sub>3</sub> ), µg/m <sup>3</sup>	Benzene (C <sub>6</sub> H <sub>6</sub> ), µg/m <sup>3</sup>
01.01.2024	N/24/01/1-0008	11	12	56	34	<20	<1
02.01.2024	N/24/01/1-0020	12	14	48	29	<20	<1
12.01.2024	N/24/01/3-0191	10	11	50	27	<20	<1
13.01.2024	N/24/01/3-0217	12	16	49	23	<20	<1
16.01.2024	N/24/01/4-0046	12	15	53	25	<20	<1
17.01.2024	N/24/01/4-0058	9	12	55	28	<20	<1
22.01.2024	N/24/01/4-219	8	11	49	23	<20	<1
23.01.2024	N/24/01/4-265	10	13	43	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	Lab Code	Lead (Pb), µg/m <sup>3</sup>	Nickel (Ni), ng/m <sup>3</sup>	Arsenic (As), ng/m <sup>3</sup>	Benzo(a) Pyrene (BaP), ng/m <sup>3</sup>	Carbon Monoxide* (CO), mg/m <sup>3</sup>	Ozone* (O <sub>3</sub> ), µg/m <sup>3</sup>
01.01.2024	N/24/01/1-0008	0.22	<0.1	<0.5	<0.5	0.30	22
02.01.2024	N/24/01/1-0020	0.16	<0.1	<0.5	<0.5	0.20	25
12.01.2024	N/24/01/3-0191	0.21	<0.1	<0.5	<0.5	0.35	28
13.01.2024	N/24/01/3-0217	<0.1	<0.1	<0.5	<0.5	0.21	24
16.01.2024	N/24/01/4-0046	0.11	<0.1	<0.5	<0.5	0.22	25
17.01.2024	N/24/01/4-0058	0.16	<0.1	<0.5	<0.5	0.25	27
22.01.2024	N/24/01/4-219	0.18	<0.1	<0.5	<0.5	0.20	22
23.01.2024	N/24/01/4-265	0.10	<0.1	<0.5	<0.5	0.23	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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## TEST REPORT

Table No. 4

### AMBIENT AIR QUALITY

Name and Address of the Industry : M/s. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,							
Sample Collected by : Environmental Laboratory Representative							
Station at & Code : A4, Near Plant Railway Siding							
Duration : 24 Hrs							
Issue date : 01.02.2024							
Reference : IS 5182 & Lab SOP							
Date of Sampling	Lab Code	Sulphur Dioxide (SO <sub>2</sub> ), µg/m <sup>3</sup>	Nitrogen Dioxide (NO <sub>2</sub> ), µg/m <sup>3</sup>	PM <sub>10</sub> , (µg/m <sup>3</sup> )	PM <sub>2.5</sub> , (µg/m <sup>3</sup> )	Ammonia (NH <sub>3</sub> ), µg/m <sup>3</sup>	Benzene (C <sub>6</sub> H <sub>6</sub> ), µg/m <sup>3</sup>
01.01.2024	N/24/01/1-0009	11	15	50	29	<20	<1
02.01.2024	N/24/01/1-0021	10	16	45	25	<20	<1
12.01.2024	N/24/01/3-0192	11	13	43	24	<20	<1
13.01.2024	N/24/01/3-0218	12	16	58	32	<20	<1
16.01.2024	N/24/01/4-0047	13	15	47	23	<20	<1
17.01.2024	N/24/01/4-0059	11	13	56	27	<20	<1
22.01.2024	N/24/01/4-220	11	12	51	28	<20	<1
23.01.2024	N/24/01/4-266	12	16	54	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	Lab Code	Lead (Pb), µg/m <sup>3</sup>	Nickel (Ni), ng/m <sup>3</sup>	Arsenic (As), ng/m <sup>3</sup>	Benzo(a) Pyrene (BaP), ng/m <sup>3</sup>	Carbon Monoxide* (CO), mg/m <sup>3</sup>	Ozone* (O <sub>3</sub> ), µg/m <sup>3</sup>
01.01.2024	N/24/01/1-0009	0.11	<0.1	<0.5	<0.5	0.26	24
02.01.2024	N/24/01/1-0021	0.13	<0.1	<0.5	<0.5	0.28	27
12.01.2024	N/24/01/3-0192	0.15	<0.1	<0.5	<0.5	0.29	25
13.01.2024	N/24/01/3-0218	0.18	<0.1	<0.5	<0.5	0.31	27
16.01.2024	N/24/01/4-0047	0.19	<0.1	<0.5	<0.5	0.24	23
17.01.2024	N/24/01/4-0059	0.15	<0.1	<0.5	<0.5	0.29	24
22.01.2024	N/24/01/4-220	0.22	<0.1	<0.5	<0.5	0.33	25
23.01.2024	N/24/01/4-266	0.15	<0.1	<0.5	<0.5	0.23	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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## TEST REPORT

Table No. 5

### Stack Monitoring Report

Report No. : N019324013

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,	
Location	: ARC Furnace area
Stack ID	: Stack Attached to Furnace - 3
Sample Collected by	: Environmental Laboratory Representative
Date of Collection	: 12.01.2024
Particulars of Sample Collected	: Emissions from stack collected through stack sample VSS1
Date of Sample Receipt	: 13.01.2024
Lab Code	: N/24/01/3-0193
Issue date	: 01.02.2024

#### STACK DETAILS

1	Fuel Used	-
2	Ambient Temperature (°C)	26
3	Stack Temperature (°C)	110
4	Velocity (m/s)	7.72
5	Stack Height (M)	35
6	Stack Diameter (M)	2.5
7	Cross Sectional Area in meter square (m <sup>2</sup> )	4.9109
8	Quantity of flue Gas Discharged into atmosphere (Nm <sup>3</sup> /hr)	96703
9	Sample Condition When Received	Satisfactory
10	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
11	Serial No. of the Equipment	338 DTH 14
12	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024

#### Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012	Test Method
1	Particulate Matter	mg/Nm <sup>3</sup>	34.86	150	IS: 11255(Part-1) 2014
2	Sulphur Dioxide (SO <sub>2</sub> ),	mg/Nm <sup>3</sup>	22.00	--	IS: 11255(Part-2) 2014
3	Nitrogen Dioxide (NO <sub>2</sub> )	mg/Nm <sup>3</sup>	30.62	--	IS: 11255(Part-7) 2017
4	CO	%	0.32	--	flue gas analyser
5	Oxygen (O <sub>2</sub> )	%	16.88	--	flue gas analyser

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## TEST REPORT

Table No. 6

### Stack Monitoring Report

Report No. : N019424013

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,	
Location	: Coke Oven Plant
Stack ID	: Stack Attached to WHRB -01
Sample Collected by	: Environmental Laboratory Representative
Date of Collection	: 12.01.2024
Particulars of Sample Collected	: Emissions from stack collected through stack sample VSS1
Date of Sample Receipt	: 13.01.2024
Lab Code	: N/24/01/3-0194
Issue date	: 01.02.2024

#### STACK DETAILS

1	Fuel Used	-
2	Ambient Temperature (°C)	26
3	Stack Temperature (°C)	260
4	Velocity (m/s)	9.59
5	Stack Height (M)	60
6	Stack Diameter (M)	4.6
7	Cross Sectional Area in meter square (m <sup>2</sup> )	16.62647
8	Quantity of flue Gas Discharged into atmosphere (Nm <sup>3</sup> /hr)	291348
9	Sample Condition When Received	Satisfactory
10	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
11	Serial No. of the Equipment	338 DTH 14
12	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024

#### Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012	Test Method
1	Particulate Matter	mg/Nm <sup>3</sup>	42.52	50	IS: 11255(Part-1) 2014
2	Sulphur Dioxide (SO <sub>2</sub> ),	mg/Nm <sup>3</sup>	66.32	800	IS: 11255(Part-2) 2014
3	Nitrogen Dioxide (NO <sub>2</sub> )	mg/Nm <sup>3</sup>	55.20	500	IS: 11255(Part-7) 2017
4	CO	%	0.51	Max1%	flue gas analyser
5	Oxygen (O <sub>2</sub> )	%	18.72	--	flue gas analyser

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## TEST REPORT

Table No. 7

### Stack Monitoring Report

Report No. : N021924013

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,	
Location	: Coke Oven Plant
Stack ID	: Stack Attached to WHRB -02
Sample Collected by	: Environmental Laboratory Representative
Date of Collection	: 13.01.2024
Particulars of Sample Collected	: Emissions from stack collected through stack sample VSS1
Date of Sample Receipt	: 15.01.2024
Lab Code	: N/24/01/3-0219
Issue date	: 01.02.2024

#### STACK DETAILS

1	Fuel Used	-
2	Ambient Temperature (°C)	26
3	Stack Temperature (°C)	220
4	Velocity (m/s)	8.64
5	Stack Height (M)	60
6	Stack Diameter (M)	4.6
7	Cross Sectional Area in meter square (m <sup>2</sup> )	16.62647
8	Quantity of flue Gas Discharged into atmosphere (Nm <sup>3</sup> /hr)	280222.0
9	Sample Condition When Received	Satisfactory
10	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
11	Serial No. of the Equipment	338 DTH 14
12	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024

#### Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012	Test Method
1	Particulate Matter	mg/Nm <sup>3</sup>	38.26	50	IS: 11255(Part-1) 2014
2	Sulphur Dioxide (SO <sub>2</sub> ),	mg/Nm <sup>3</sup>	68.20	800	IS: 11255(Part-2) 2014
3	Nitrogen Dioxide (NO <sub>2</sub> )	mg/Nm <sup>3</sup>	56.52	500	IS: 11255(Part-7) 2017
4	CO	%	0.38	Max1%	flue gas analyser
5	Oxygen (O <sub>2</sub> )	%	6.30	--	flue gas analyser

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## TEST REPORT

Table No. 8

### Stack Monitoring Report

Report No. : N022024013

<b>Name and Address of the Industry :</b> Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,	
<b>Location</b>	: Coke Oven Plant
<b>Stack ID</b>	: Stack Attached to Coal Crushing
<b>Sample Collected by</b>	: Environmental Laboratory Representative
<b>Date of Collection</b>	: 13.01.2024
<b>Particulars of Sample Collected</b>	: Emissions from stack collected through stack sample VSS1
<b>Date of Sample Receipt</b>	: 17.01.2024
<b>Lab Code</b>	: N/24/01/3-0220
<b>Issue date</b>	: 01.02.2024

#### STACK DETAILS

1	Fuel Used	-
2	Ambient Temperature (°C)	26
3	Stack Temperature (°C)	64
4	Velocity (m/s)	6.86
5	Stack Height (M)	15
6	Stack Diameter (M)	0.8
7	Cross Sectional Area in meter square (m <sup>2</sup> )	0.4419
8	Quantity of flue Gas Discharged into atmosphere (Nm <sup>3</sup> /hr)	9962
9	Sample Condition When Received	Satisfactory
10	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
11	Serial No. of the Equipment	338 DTH 14
12	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024

#### Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012	Test Method
1	Particulate Matter	mg/Nm <sup>3</sup>	25.32	50	IS: 11255(Part-1) 2014

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## TEST REPORT

Table No. 9

### Stack Monitoring Report

Report No. : N006024014

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,	
Location	: Coke Oven Plant
Stack ID	: Stack Attached to Coke Cutter
Sample Collected by	: Environmental Laboratory Representative
Date of Collection	: 17.01.2024
Particulars of Sample Collected	: Emissions from stack collected through stack sample VSS1
Date of Sample Receipt	: 20.01.2024
Lab Code	: N/24/01/4-0060
Issue date	: 01.02.2024

#### STACK DETAILS

1	Fuel Used	-
2	Ambient Temperature (°C)	26
3	Stack Temperature (°C)	52
4	Velocity (m/s)	6.47
5	Stack Height (M)	15
6	Stack Diameter (M)	0.7
7	Cross Sectional Area in meter square (m <sup>2</sup> )	0.3850
8	Quantity of flue Gas Discharged into atmosphere (Nm <sup>3</sup> /hr)	7461
9	Sample Condition When Received	Satisfactory
10	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
11	Serial No. of the Equipment	338 DTH 14
12	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024

#### Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012	Test Method
1	Particulate Matter	mg/Nm <sup>3</sup>	29.21	50	IS: 11255(Part-1) 2014

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## TEST REPORT

Table No. 10

### Stack Monitoring Report

Report No. : N006124014

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,	
Location	: Coke Oven Plant
Stack ID	: Stack Attached to Coke Screening & Store
Sample Collected by	: Environmental Laboratory Representative
Date of Collection	: 17.01.2024
Particulars of Sample Collected	: Emissions from stack collected through stack sample VSS1
Date of Sample Receipt	: 20.01.2024
Lab Code	: N/24/01/4-0061
Issue date	: 01.02.2024

#### STACK DETAILS

1	Fuel Used	-
2	Ambient Temperature ( $^{\circ}$ C)	26
3	Stack Temperature ( $^{\circ}$ C)	56
4	Velocity (m/s)	6.06
5	Stack Height (M)	15
6	Stack Diameter (M)	0.7
7	Cross Sectional Area in meter square ( $m^2$ )	0.3850
8	Quantity of flue Gas Discharged into atmosphere ( $Nm^3/hr$ )	6909
9	Sample Condition When Received	Satisfactory
10	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
11	Serial No. of the Equipment	338 DTH 14
12	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024

#### Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Tolerance Limits Ref - G.S.R. 227(E) dated 31.03.2012	Test Method
1	Particulate Matter	mg/ $Nm^3$	32.12	50	IS: 11255(Part-1) 2014

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## TEST REPORT

Table No. 11

### AMBIENT NOISE LEVEL DATA

<b>Name and Address of the Industry :</b> Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,							
<b>Particulars of Sample Collected :</b> Ambient Noise Level collected through Sound Level Meter (HTC SL-1352 Data Logger)							
<b>Sample Collected by :</b> Environmental Laboratory Representative							
<b>Date of sample collection :</b> 16.01.2024							
<b>Date of sample receipt :</b> 17.01.2024							
<b>Issue Date :</b> 01.02.2024							
<b>Sampling &amp; Test Method :</b> IS:9989							
Code No.	Monitoring stations	Day			Night		
		(06.00 Am to 10.00 Pm)			(10.00 Pm to 06.00 Am)		
		L <sub>min</sub>	L <sub>eq</sub>	L <sub>max</sub>	L <sub>min</sub>	L <sub>eq</sub>	L <sub>max</sub>
<b>Core zone</b>							
N1	Near Existing AAQMS 01 (SMIORE Schools)	40.0	51.4	59.6	35.2	43.0	49.5
N2	Existing Water Reservoir (Near WTP Plant)	37.0	53.7	60.3	34.8	43.1	47.6
<b>Buffer zone</b>							
N3	Galemmanagudi	37.3	50.7	58.0	34.0	43.0	48.3
N4	Vysanakere Village	39.3	50.9	57.2	34.0	44.6	46.8
N5	Hanumanhalli	37.5	50.9	56.8	36.0	43.7	48.1
<b><u>Permissible Limits of Ambient Noise Levels as per CPCB Guidelines</u></b>							
<b>Leq. Limit dB(A)</b>							
		<b>Day</b>		<b>Night</b>			
Industrial areas		75		70			
Commercial area		65		55			
Residential area		55		45			

*Arshiya Kousar*

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## TEST REPORT

Table No.12

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasankere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,					
Sample Collected by : Environmental Laboratory Representative					
Particulars of sample collected : SW1 - Tungabhadra Dam water SW2 - Plant Reservoir					
Date of sample collection : 13.01.2024					
Date of sample receipt : 16.01.2024					
Issue Date : 25.01.2024					
Ref:IS : 2296, 1982 Class C Norms (Stream Water Standards)					
Lab Code	N/24/01/3-0009	N/24/01/3-0010	Limits For Stream Water Standards	Method of Testing	
Sample Code	SW1	SW2			
Sl.No	Parameters	Results			
1	Colour (Hazen Units), Max	10	15	300	IS:3025(Part-4)2021
2	pH	8.11	8.26	6.5 to 8.5	IS:3025(Part-11)2022
3	Dissolved Oxygen (as O <sub>2</sub> ), mg/l, Max	5.6	5.4	Min 4	IS:3025(Part-38)1989RA 2019
4	Oil & Grease, mg/l	<0.1	<0.1	0.1	IS:3025(Part 39)2021
5	Total Dissolved Solids (mg/l), Max	152	250	1500	IS:3025(Part-16)2023
6	Nitrates (as NO <sub>3</sub> ),mg/l, Max	0.86	1.20	50	IS:3025(Part-34)1988 RA 2019
7	Anionic detergents (as MBAS),mg/l, Max	<0.1	<0.1	1.0	IS:3025(Part-68)
8	Copper (as Cu),mg/l, Max	<0.005	<0.005	1.5	IS:3025(Part-2) 2019
9	Chloride (as Cl),mg/l, Max	31.99	62.98	600	IS:3025(Part-32)-1988RA2019
10	Fluoride (as F),mg/l, Max	0.15	0.38	1.5	APHA 23rd Edition 4500F
11	Iron (as Fe),mg/l, Max	0.0026	0.03	50	IS:3025(P-2) 2019
12	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH),mg/l, Max	<0.001	<0.001	0.005	IS:3025(P-43)Sec 1 2022
13	Selenium (as Se), mg/l, Max	<0.005	<0.005	0.05	IS:3025(P-2) 2019
14	Sulphates as SO <sub>4</sub> (mg/l), Max	21.3	38.4	400	IS:3025(P-24)Sec 1 2022
15	Zinc (as Zn),mg/l, Max	0.058	0.071	15	IS:3025(P-2) 2019
16	Cadmium (as Cd), mg/l, Max	<0.001	<0.001	0.01	IS:3025(P-2) 2019
17	Cyanides (as CN), mg/l, Max	<0.01	<0.01	0.05	IS:3025(P-27) Sec 1 2021
18	Lead (as Pb) mg/l, Max	<0.005	<0.005	0.1	IS:3025(P-2) 2019
19	Total Arsenic as As (mg/l), Max	<0.002	<0.002	0.2	IS:3025(P-2) 2019
20	Hexavalent Chromium (as Cr <sup>+6</sup> ), mg/l, Max	<0.03	<0.03	0.05	IS:3025(P-52) 2014
21	Biochemical Oxygen Demand (as O <sub>2</sub> ), mg/l	<3.0	<3.0	3	IS:3025(P-44) 2014
22	Total Coliform (mpn/100ml)	38	64	5000	IS:1622:1981

"END OF REPORT"

  
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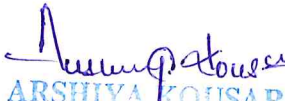
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## TEST REPORT

<b>Name of the Client</b>	: M/s. Sandur Manganese & Iron Ores Limited			
<b>Name of the Project</b>	: Iron & Steel Plant at Vyasanakere village, Hosapete Taluk, Ballari District, Karnataka			
<b>Particulars of sample collected</b>	: Raw Effluent water.			
<b>Date of sample collection</b>	: 17.01.2024			
<b>Lab Code</b>	: N/24/01/3-0232			
<b>Issue Date</b>	: 30.01.2024			
Sl.No.	Parameters	units	Results	Method of Testing
1	pH	-	6.42	IS 3025 (P-11)2017
3	Total Suspended Solids, at 105 <sup>0</sup> C	mg/l	310	IS 3025 (P-16)1984 RA 2017
2	Biochemical Oxygen Demand BOD <sub>3</sub> 27 <sup>0</sup> C	mg/l	186	IS 3025 (P-44) 1993 RA 2019
3	Chemical Oxygen Demand (COD)	mg/l	960	IS 3025 (P-58) 2006 RA 2017
4	Total Kjeldahl Nitrogen,	mg/l	38	IS 3025 (Part-34)
5	Fecal coliform	MPN/100ml	542	IS:1622

  
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## TEST REPORT

Name of the Client	: M/s. Sandur Manganese & Iron Ores Limited				
Name of the Project	: Iron & Steel Plant at Vyasankere village, Hosapete Taluk, Ballari District, Karnataka				
Particulars of sample collected	: Effluent Treated Plant water				
Date of sample collection	: 17.01.2024				
Lab Code	: N/24/01/3-0233				
Issue Date	: 30.01.2024				
Sl.No.	Parameters	units	Results	Sewage Effluent Discharge Standards	Method of Testing
1	pH	-	6.36	6.0 to 8.5	IS 3025 (P-11)2017
3	Total Suspended Solids, at 105 <sup>0</sup> C	mg/l	10	100	IS 3025 (P-16)1984 RA 2017
2	Biochemical Oxygen Demand BOD <sub>3</sub> 27 <sup>0</sup> C	mg/l	5.3	30	IS 3025 (P-44) 1993 RA 2019
3	Chemical Oxygen Demand (COD)	mg/l	26	250	IS 3025 (P-58) 2006 RA 2017
4	Total Kjeldahl Nitrogen,	mg/l	<1	-	IS 3025 (Part-34)
5	Fecal coliform	MPN/100ml	4	<1000	IS:15185 :2016 RA 2021

  
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