

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
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Sandur - 583 119, Ballari District
Karnataka, India
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Ref No: SMIORE/PLANT/ENV/MR/2024-25/01

04 April 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 March-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

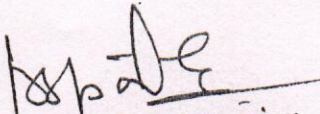
Dear Sir,

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 March -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: 6/4/24 ಸಹಿ 

Encl: Environmental Monitoring Report March -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

March, 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)
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ENVIRONMENTAL LABORATORY
Unit of Mineral Engineering Services)
(Accredited by NABL &, MOEF&CC Under
E(P) 1986)
#948, 2nd Cross, Kammanahalli Main
Road, St Thomas Town Post, Bangalore-
560 084, Karnataka,

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(UNIT OF MINERAL ENGINEERING SERVICES)

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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 : 01.04.2024

Reference IS 5182 & Lab SOP

Date of Sampling	Lab Code	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
04.03.2024	N/24/03/3-0006	9	12	69	34	<20	<1
05.03.2024	N/24/03/3-0030	10	12	57	28	<20	<1
15.03.2024	N/24/03/4-0201	14	18	59	33	<20	<1
16.03.2024	N/24/03/4-0224	12	17	61	35	<20	<1
18.03.2024	N/24/03/5-0011	11	14	52	27	<20	<1
19.03.2024	N/24/03/5-0042	10	18	49	25	<20	<1
25.03.2024	N/24/03/5-0323	13	20	55	30	<20	<1
26.03.2024	N/24/03/5-0356	11	19	57	32	<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 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
04.03.2024	N/24/03/3-0006	0.17	<0.1	<0.5	<0.5	0.38	22
05.03.2024	N/24/03/3-0030	0.17	<0.1	<0.5	<0.5	0.30	24
15.03.2024	N/24/03/4-0201	0.22	<0.1	<0.5	<0.5	0.22	25
16.03.2024	N/24/03/4-0224	0.13	<0.1	<0.5	<0.5	0.41	23
18.03.2024	N/24/03/5-0011	0.18	<0.1	<0.5	<0.5	0.38	20
19.03.2024	N/24/03/5-0042	0.26	<0.1	<0.5	<0.5	0.28	25
25.03.2024	N/24/03/5-0323	0.25	<0.1	<0.5	<0.5	0.21	28
26.03.2024	N/24/03/5-0356	0.15	<0.1	<0.5	<0.5	0.22	26
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. 2

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 : A2, Existing Water Reservoir (Near WTP Plant)

Duration : 24 Hrs

Issue date : 01.04.2024

Reference IS 5182 & Lab SOP

Date of Sampling	Lab Code	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
04.03.2024	N/24/03/3-0007	10	17	63	34	<20	<1
05.03.2024	N/24/03/3-0031	12	13	55	30	<20	<1
15.03.2024	N/24/03/4-0202	11	15	53	37	<20	<1
16.03.2024	N/24/03/4-0225	11	15	43	26	<20	<1
18.03.2024	N/24/03/5-0012	10	17	59	30	<20	<1
19.03.2024	N/24/03/5-0043	13	18	54	31	<20	<1
25.03.2024	N/24/03/5-0324	11	12	49	27	<20	<1
26.03.2024	N/24/03/5-0357	11	15	55	34	<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 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
04.03.2024	N/24/03/3-0007	0.11	<0.1	<0.5	<0.5	0.35	26
05.03.2024	N/24/03/3-0031	0.19	<0.1	<0.5	<0.5	0.26	25
15.03.2024	N/24/03/4-0202	0.20	<0.1	<0.5	<0.5	0.32	20
16.03.2024	N/24/03/4-0225	0.22	<0.1	<0.5	<0.5	0.20	28
18.03.2024	N/24/03/5-0012	0.11	<0.1	<0.5	<0.5	0.35	25
19.03.2024	N/24/03/5-0043	0.18	<0.1	<0.5	<0.5	0.33	26
25.03.2024	N/24/03/5-0324	0.26	<0.1	<0.5	<0.5	0.29	22
26.03.2024	N/24/03/5-0357	0.22	<0.1	<0.5	<0.5	0.20	27
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. 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 : 01.04.2024

Reference IS 5182 & Lab SOP

Date of Sampling	Lab Code	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
04.03.2024	N/24/03/3-0008	9	11	57	32	<20	<1
05.03.2024	N/24/03/3-0032	11	16	54	30	<20	<1
15.03.2024	N/24/03/4-0203	12	18	52	27	<20	<1
16.03.2024	N/24/03/4-0226	11	15	50	31	<20	<1
18.03.2024	N/24/03/5-0013	7	13	61	28	<20	<1
19.03.2024	N/24/03/5-0044	12	17	48	24	<20	<1
25.03.2024	N/24/03/5-0325	11	15	56	30	<20	<1
26.03.2024	N/24/03/5-0358	9	18	58	32	<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 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
04.03.2024	N/24/03/3-0008	0.20	<0.1	<0.5	<0.5	0.21	23
05.03.2024	N/24/03/3-0032	0.18	<0.1	<0.5	<0.5	0.33	25
15.03.2024	N/24/03/4-0203	0.13	<0.1	<0.5	<0.5	0.26	28
16.03.2024	N/24/03/4-0226	0.11	<0.1	<0.5	<0.5	0.23	21
18.03.2024	N/24/03/5-0013	0.16	<0.1	<0.5	<0.5	0.25	24
19.03.2024	N/24/03/5-0044	0.18	<0.1	<0.5	<0.5	0.27	26
25.03.2024	N/24/03/5-0325	0.16	<0.1	<0.5	<0.5	30.00	21
26.03.2024	N/24/03/5-0358	0.12	<0.1	<0.5	<0.5	0.31	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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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 : 01.04.2024

Reference IS 5182 & Lab SOP

Date of Sampling	Lab Code	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
04.03.2024	N/24/03/3-0009	9	14	48	28	<20	<1
05.03.2024	N/24/03/3-0033	11	18	42	25	<20	<1
15.03.2024	N/24/03/4-0204	12	14	61	34	<20	<1
16.03.2024	N/24/03/4-0227	10	12	55	32	<20	<1
18.03.2024	N/24/03/5-0014	12	14	54	31	<20	<1
19.03.2024	N/24/03/5-0045	12	17	48	29	<20	<1
25.03.2024	N/24/03/5-0326	13	18	51	31	<20	<1
26.03.2024	N/24/03/5-0359	11	15	53	33	<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 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
04.03.2024	N/24/03/3-0009	0.19	<0.1	<0.5	<0.5	0.30	21
05.03.2024	N/24/03/3-0033	0.22	<0.1	<0.5	<0.5	0.26	28
15.03.2024	N/24/03/4-0204	0.25	<0.1	<0.5	<0.5	0.25	25
16.03.2024	N/24/03/4-0227	0.19	<0.1	<0.5	<0.5	0.21	28
18.03.2024	N/24/03/5-0014	0.16	<0.1	<0.5	<0.5	0.26	30
19.03.2024	N/24/03/5-0045	0.22	<0.1	<0.5	<0.5	0.31	25
25.03.2024	N/24/03/5-0326	0.18	<0.1	<0.5	<0.5	0.29	29
26.03.2024	N/24/03/5-0359	0.13	<0.1	<0.5	<0.5	0.27	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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TEST REPORT

Table No. 5

Analysis Report of Fugitive Emission

Report No.N020524034

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 : Near Battery Area (Coke Oven)							
Duration : 08 Hrs							
Issue date : 01.04.2024							
Reference IS 5182 & Lab Sop							
Date of Sampling	Lab Code	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	Benzo (a) Pyrene (BaP) µg/m ³
15.03.2024	N/24/03/4-0205	13	18	546	0.25	0.43	<0.0005
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	2 8 Hrs
Note : * Parameters monitored for period of 1 hr							

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TEST REPORT

Table No. 6

Analysis Report of Fugitive Emission

Report No. N022824034

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd., (Metal & Ferro Alloys Plant), Vyasnakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist,							
Sample Collected by : Environmental Laboratory Representative							
Station at & Code : Coal Storage area (Coke Oven)							
Duration : 08 Hrs							
Issue date : 01.04.2024							
Reference IS 5182 & Lab Sop							
Date of Sampling	Lab Code	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	Benzo (a) Pyrene (BaP) µg/m ³
16.03.2024	N/24/03/4-0228	11	15	497	0.19	0.36	<0.0005
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	2 8 Hrs
Note : * Parameters monitored for period of 1 hr							

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TEST REPORT

Table No. 7

Analysis Report of Fugitive Emission

Report No.N001524035

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 : Finished goods yard in between F3 & F5 (M&FA)						
Duration : 08 Hrs						
Issue date : 01.04.2024						
Reference IS 5182 & Lab Sop						
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM (µg/m ³)	Lead (Pb), µg/m ³	Carbon Monoxide* (CO), mg/m ³
18.03.2024	N/24/03/5-0015	14	18	475	0.22	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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TEST REPORT

Table No. 8

Analysis Report of Fugitive Emission

Report No.N004624035

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 : Raw martial storage area (M&FA)						
Duration : 08 Hrs						
Issue date : 01.04.2024						
Reference IS 5182 & Lab Sop						
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM (µg/m ³)	Lead (Pb), µg/m ³	Carbon Monoxide* (CO), mg/m ³
19.03.2024	N/24/03/5-0046	10	14	387	0.15	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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TEST REPORT

Table No. 9

Stack Monitoring Report

Report No. N020624034

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasnakere, 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	: 15.03.2024
Particulars of Sample Collected	: Emissions from stack collected through stack sample VSS1
Date of Sample Receipt	: 16.03.2024
Lab Code	: N/24/03/4-0206
Issue date	: 01.04.2024

STACK DETAILS

1	Fuel Used	-
2	Ambient Temperature ($^{\circ}\text{C}$)	35
3	Stack Temperature ($^{\circ}\text{C}$)	125
4	Velocity (m/s)	8.04
5	Stack Height (M)	35
6	Stack Diameter (M)	2.5
7	Cross Sectional Area in meter square (m^2)	4.9109
8	Quantity of flue Gas Discharged into atmosphere (Nm^3/hr)	96653
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	38.22	150	IS: 11255(Part-1) 2014
2	Sulphur Dioxide (SO_2)	mg/Nm^3	24.10	--	IS: 11255(Part-2) 2014
3	Nitrogen Dioxide (NO_2)	mg/Nm^3	33.05	--	IS: 11255(Part-7) 2017
4	CO	%	0.37	--	flue gas analyser
5	Oxygen (O_2)	%	16.12	--	flue gas analyser

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TEST REPORT

Table No. 10

Stack Monitoring Report

Report No. N024624034

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 : 18.03.2024

Particulars of Sample Collected : Emissions from stack collected through stack sample VSS1

Date of Sample Receipt : 20.03.2024

Lab Code : N/24/03/4-0246

Issue date : 01.04.2024

STACK DETAILS

1	Fuel Used	-
2	Ambient Temperature ($^{\circ}\text{C}$)	35
3	Stack Temperature ($^{\circ}\text{C}$)	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^2)	16.62647
8	Quantity of flue Gas Discharged into atmosphere (Nm^3/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^3	33.66	50	IS: 11255(Part-1) 2014
2	Sulphur Dioxide (SO_2)	mg/Nm^3	62.44	800	IS: 11255(Part-2) 2014
3	Nitrogen Dioxide (NO_2)	mg/Nm^3	68.66	500	IS: 11255(Part-7) 2017
4	CO	%	0.51	Max1%	flue gas analyser
5	Oxygen (O_2)	%	9.33	--	flue gas analyser

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TEST REPORT

Table No. 11

Stack Monitoring Report

Report No. N024824034

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	: 18.03.2024
Particulars of Sample Collected	: Emissions from stack collected through stack sample VSS1
Date of Sample Receipt	: 20.03.2024
Lab Code	: N/24/03/4-0247
Issue date	: 01.04.2024

STACK DETAILS

1	Fuel Used	-
2	Ambient Temperature (°C)	35
3	Stack Temperature (°C)	242
4	Velocity (m/s)	8.84
5	Stack Height (M)	60
6	Stack Diameter (M)	4.6
7	Cross Sectional Area in meter square (m ²)	16.62647
8	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	277959.0
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 ³	32.16	50	IS: 11255(Part-1) 2014
2	Sulphur Dioxide (SO ₂)	mg/Nm ³	69.21	800	IS: 11255(Part-2) 2014
3	Nitrogen Dioxide (NO ₂)	mg/Nm ³	82.30	500	IS: 11255(Part-7) 2017
4	CO	%	0.46	Max1%	flue gas analyser
5	Oxygen (O ₂)	%	7.11	--	flue gas analyser

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TEST REPORT

Table No. 12

Stack Monitoring Report

Report No. N020724034

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 Coal Crushing

Sample Collected by : Environmental Laboratory Representative

Date of Collection : 15.03.2024

Particulars of Sample Collected : Emissions from stack collected through stack sample VSS1

Date of Sample Receipt : 16.03.2024

Lab Code : N/24/03/4-0207

Issue date : 01.04.2024

STACK DETAILS

1	Fuel Used	-
2	Ambient Temperature ($^{\circ}\text{C}$)	33
3	Stack Temperature ($^{\circ}\text{C}$)	66
4	Velocity (m/s)	6.97
5	Stack Height (M)	15
6	Stack Diameter (M)	0.7
7	Cross Sectional Area in meter square (m^2)	0.4419
8	Quantity of flue Gas Discharged into atmosphere (Nm^3/hr)	10069
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	32.51	50	IS: 11255(Part-1) 2014

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TEST REPORT

Table No. 13

Stack Monitoring Report

Report No. N04824034

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	: 19.03.2024
Particulars of Sample Collected	: Emissions from stack collected through stack sample VSS1
Date of Sample Receipt	: 20.03.2024
Lab Code	: N/24/03/4-0248
Issue date	: 01.04.2024

STACK DETAILS

1	Fuel Used	-
2	Ambient Temperature ($^{\circ}\text{C}$)	33
3	Stack Temperature ($^{\circ}\text{C}$)	68
4	Velocity (m/s)	6.63
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)	7281
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	34.88	50	IS: 11255(Part-1) 2014

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TEST REPORT

Table No. 14

Stack Monitoring Report

Report No. N024924034

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		: 19.03.2024			
Particulars of Sample Collected		: Emissions from stack collected through stack sample VSS1			
Date of Sample Receipt		: 20.03.2024			
Lab Code		: N/24/03/4-0249			
Issue date		: 01.04.2024			
STACK DETAILS					
1	Fuel Used	-			
2	Ambient Temperature (°C)	33			
3	Stack Temperature (°C)	74			
4	Velocity (m/s)	6.23			
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)	6724			
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	35.22	50	IS: 11255(Part-1) 2014

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TEST REPORT

Table No. 15

Stack Monitoring Report

Report No. : N022924034

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

Stack ID : DG Set 750 KVA (Coke Oven)

Sample Collected by : Environmental Laboratory Representative

Date of Collection : 16.03.2024

Particulars of Sample Collected : Emissions from stack collected through stack sample VSS1

Date of Sample Receipt : 18.03.2024

Lab Code : N/24/03/4-0229

Issue date : 01.04.2024

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature ($^{\circ}\text{C}$)	35
3	Stack Temperature ($^{\circ}\text{C}$)	194
4	Velocity (m/s)	6.1
5	Stack Height (M)	15.0
6	Stack diameter (M)	0.30
7	Quantity of flue Gas Discharged into atmosphere (Nm^3/hr)	1946
8	Sample Condition When Received	Satisfactory
9	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
10	Serial No. of the Equipment	338 DTH 14
11	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024
12	Sampling and Analysis Method	IS 11255 & flue gas analyser

Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Standard
1	Particulate Matter	g/Kw-hr	0.078	<0.2
2	CO	g/Kw-hr	0.14	<3.5
3	Nox +HC	g/Kw-hr	0.21	<4.0

INFERENCE

as per KSPCB

Report Status - The measured values for the above parameters for those standards have been specified were observed to be within the said standards

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TEST REPORT

Table No. 16

Stack Monitoring Report

Report No. : N023024034

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

Stack ID : DG Set 250 KVA at VHT-2

Sample Collected by : Environmental Laboratory Representative

Date of Collection : 16.03.2024

Particulars of Sample Collected : Emissions from stack collected through stack sample VSS1

Date of Sample Receipt : 18.02.2024

Lab Code : N/24/03/4-0230

Issue date : 01.04.2024

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature (°C)	35
3	Stack Temperature (°C)	168
4	Velocity (m/s)	11.96
5	Stack Height (M)	5.0
6	Stack diameter (M)	0.20
7	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	951
8	Sample Condition When Received	Satisfactory
9	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
10	Serial No. of the Equipment	338 DTH 14
11	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024
12	Sampling and Analysis Method	IS 11255 & flue gas analyser

Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Standard
1	Particulate Matter	g/Kw-hr	0.15	<0.2
2	CO	g/Kw-hr	0.30	<3.5
3	Nox +HC	g/Kw-hr	0.65	<4.0

INFERENCE	as per KSPCB
	Report Status - The measured values for the above parameters for those standards have been specified were observed to be within the said standards

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TEST REPORT

Table No. 17

Stack Monitoring Report

Report No. : N023124034

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd.				
(Metal & Ferro Alloys Plant),				
Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,				
Stack ID	: DG Set 250 KVA at New baghouse			
Sample Collected by	: Environmental Laboratory Representative			
Date of Collection	: 16.03.2024			
Particulars of Sample Collected	: Emissions from stack collected through stack sample VSS1			
Date of Sample Receipt	: 18.03.2024			
Lab Code	: N/24/03/4-0231			
Issue date	: 01.04.2024			
STACK DETAILS				
1	Fuel Used	Diesel		
2	Ambient Temperature ($^{\circ}\text{C}$)	35		
3	Stack Temperature ($^{\circ}\text{C}$)	246		
4	Velocity (m/s)	15.96		
5	Stack Height (M)	5.0		
6	Stack diameter (M)	0.20		
7	Quantity of flue Gas Discharged into atmosphere (Nm^3/hr)	1160		
8	Sample Condition When Received	Satisfactory		
9	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1		
10	Serial No. of the Equipment	338 DTH 14		
11	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024		
12	Sampling and Analysis Method	IS 11255 & flue gas analyser		
Pollutional Parameters (Result)				
Sl.No	Parameters	Unit	Results	Standard
1	Particulate Matter	g/Kw-hr	0.08	<0.2
2	CO	g/Kw-hr	0.56	<3.5
3	Nox +HC	g/Kw-hr	0.97	<4.0

INFERENCE	as per KSPCB
	Report Status - The measured values for the above parameters for those standards have been specified were observed to be within the said standards

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TEST REPORT

Table No. 18

Stack Monitoring Report

Report No. : N020824034

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,	
Stack ID	: DG Set 625 KVA (Power Plant)
Sample Collected by	: Environmental Laboratory Representative
Date of Collection	: 15.02.2024
Particulars of Sample Collected	: Emissions from stack collected through stack sample VSS1
Date of Sample Receipt	: 16.03.2024
Lab Code	: N/24/03/4-0208
Issue date	: 01.04.2024

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature (°C)	35
3	Stack Temperature (°C)	415
4	Velocity (m/s)	19.59
5	Stack Height (M)	15.0
6	Stack diameter (M)	0.30
8	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	1961
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
13	Sampling and Analysis Method	IS 11255 & flue gas analyser

Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Standard
1	Particulate Matter	g/Kw-hr	0.13	<0.2
2	CO	g/Kw-hr	0.50	<3.5
3	Nox +HC	g/Kw-hr	0.87	<4.0

INFERENCE	as per KSPCB
	Report Status - The measured values for the above parameters for those standards have been specified were observed to be within the said standards

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TEST REPORT

Table No. 19

AMBIENT NOISE LEVEL DATA

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd.

(Metal & Ferro Alloys Plant),

Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,

Particulars of Sample Collected : Ambient Noise Level collected through Sound Level Meter (HTC SL-1352 Data Logger)

Sample Collected by : Environmental Laboratory Representative

Date of sample collection : 18.03.2024

Date of sample receipt : 20.03.2024

Issue Date : 01.04.2024

Sampling & Test Method : IS:9989

Code No.	Monitoring stations	Day			Night		
		(06.00 Am to 10.00 Pm)			(10.00 Pm to 06.00 Am)		
		L _{min}	L _{eq}	L _{max}	L _{min}	L _{eq}	L _{max}
Core zone							
N1	Near Existing AAQMS 01 (SMIORE Schools)	41.0	51.7	60.0	34.0	42.5	48.3
N2	Existing Water Reservoir (Near WTP Plant)	42.5	55.1	62.8	34.8	44.7	49.5
Buffer zone							
N3	Galemmanagudi	37.0	50.7	58.2	34.6	42.6	46.8
N4	Vysanakere Village	41.0	51.4	57.3	34.0	44.6	49.2
N5	Hanumanhalli	38.0	52.4	60.0	36.0	43.7	48.2

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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TEST REPORT

Table No. 20

FUGITIVE NOISE LEVEL DATA

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

Particulars of Sample Collected : Work zone Noise Level collected through Sound
Level Meter (HTC SL-1352 Data Logger)

Sample Collected by : Mineral Engineering Services

Date of sample collection : 16.03.2024

Date of sample receipt : 18.03.2024

Issue Date : 01.04.2024

Code No.	Monitoring stations	Day			Remarks
		L _{min}	L _{eq}	L _{max}	
Corezone					
1	ARC Furnace -3 area	49.3	63.5	74.2	During operation
2	ARC Furnace -5 area	46.2	60.2	70.1	During operation
3	Near WHRB -1	41.3	58.6	73.2	During operation
4	Near WHRB -2	44.3	60.8	70.8	During operation
5	Near Power plant turbine	39.2	46.5	53.8	During shut down

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)

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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TEST REPORT



Table No. 21

FUGITIVE NOISE LEVEL DATA

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasnakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,				
Particulars of Sample Collected		: DG Noise Level collected through Sound Level Meter (HTC SL-1352 Data Logger)		
Sample Collected by		: Mineral Engineering Services		
Date of sample collection		: 19.03.2024		
Date of sample receipt		: 20.03.2024		
Issue Date		: 01.04.2024		
Code No.	Sample Location	Remarks	Parameters	
			Sound level in dB(A)	
			L_{eq}	CPCB Std.
N1	Stack Attached to 750 KVA (Coke Oven)	Monitoring done at 1mts distance from DG Set	72.6	75.0
N2	Stack Attached to 250 KVA at VHT-2		73.8	
N3	Stack Attached to 250 KVA at New Baghouse		68.9	
N4	Stack Attached to 625 KVA (Power Plant)		70.9	
Note • Day Time is reckoned between 6 Am to 10 PM • Night Time is reckoned between 10 Pm to 6Am • L_{eq} It is energy means of the noise level over a specified period. • "dB (A) L_{eq} denotes the time weighted average of the level of sound in decibels on scale 'A' which is related to human hearing. • A "decible" is a unit in which noise is measured. • "A", in dB(A) L_{eq}, denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristic of human ear.				
INFERENCE		As per CPCB standards, Report status: - The measured values for the above locations are within the standards		

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TEST REPORT

Table No. 22

Report No : N024624034

Name of the Client	M/s. M/s. Sandur Manganese & Iron Ores Limited (Metal & Ferro Alloys Plant),				
Name of the Project	Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist,				
Particulars of sample collected	DW1 - Plant Drinking water				
Sample Collected by	Environmental Laboratory Representative				
Date of sample collection	16.03.2024				
Date of sample receipt	17.03.2024				
Lab Code	N/24/03/4-0246				
Issue Date	29.03.2024				
Ref : IS:10500-2012 Norms Amendment - 4 (Drinking Water Standards)					
Sl. No.	Parameters	Results	Desirable Limits	Permissible Limits	Method of Testing
1	Colour (Hazen Units), Max	1	5	15	IS:3025 (P-4)2021
2	Odour, Max	Agreeable	Agreeable	Agreeable	IS:3025 (P-5) 2018
3	pH Value	7.66	6.5 to 8.5	6.5 - 8.5	IS:3025 (P-11)2022
4	Taste	Agreeable	Agreeable	Agreeable	IS:3025 (P- 8)1984 RA 2017
5	Turbidity,NTU, Max	3.2	1	5	IS:3025 (P-10)1984 RA2017
6	Electrical Conductivity (umhos/cm)	84	--	--	IS 3025 (P-14)
7	Total Dissolved Solids,mg/l, Max	52	500	2000	IS:3025 (P-16)1984 RA2017
8	Aluminium (as Al), Max	<0.01	0.03	0.2	IS:3025 (P-55)2003 RA2019
9	Ammonia (as total Ammonia -N),mg/l, Max	<0.1	0.5	0.5	IS:3025 (P-34)1988 RA2019
10	Anionic Detergents (as MBAS),mg/l, Max	<0.1	0.2	1.0	Annex K of Is:13428Amm 11 2022
11	Barium (as Ba), mg/l, Max	<0.005	0.7	0.7	IS:3025(P-2)2019
12	Boron (as B), mg/l, Max	<0.1	0.5	2.4	IS:3025 (Part-57)2021
13	Calcium (as Ca),mg/l, Max	4.00	75	200	IS:3025 (P-40)1991 RA 2019
14	Copper (as Cu),mg/l, Max	<0.005	0.05	1.5	IS:3025 (P-2)2019
15	Chloride as Cl (mg/l),mg/l, Max	16.22	250	1000	IS:3025 (P-32)1988 RA 2019
16	Fluoride (as F),mg/l, Max	<0.1	1	1.5	IS:3025 (P-60)2008 RA 2019
17	Residual, Free Chlorine,mg/l, Max	<0.1	0.2	1	IS:3025 (P-26)2021
18	Chloramines as C12, Max	<0.1	4	4	IS:3025(P-26)2021
19	Iron (as Fe),mg/l, Max	<0.005	1.0	1.0	IS:3025 (Part-2)2019
20	Magnesium (as Mg)mg/l, Max	2.5	30	100	IS:3025 (P-46)1994 RA 2019
21	Manganese (as Mn),mg/l, Max	<0.001	0.1	0.3	IS:3025 (P-2)2019
22	Mineral Oil,mg/l, Max	<0.5	1.0	1.0	Clause 6 of IS 3025 (P-39) 2021
23	Nitrates (as NO ₃),mg/l, Max	0.21	45	45	IS:3025 (P-34) 1988 RA 2019
24	Phenolics (as C ₆ H ₅ OH),mg/l, Max	<0.001	0.001	0.002	IS:3025 (P-43)Sec 1 2022
25	Selenium (as Se),mg/l, Max	<0.005	0.01	0.01	IS:3025(P-2)2019
26	Silver (as Ag), mg/l, Max	<0.005	0.1	0.1	IS:3025(P-2)2019
27	Molybdenum (as Mo), mg/l, Max	<0.001	0.07	0.07	IS:3025 (P-2)2019
28	Sulphates (as SO ₄),mg/l, Max	4.11	200	400	IS:3025 (P-24) Sec 1 2022
29	Sulphide (as H ₂ S) , mg/l, Max	<0.01	0.05	0.05	IS:3025 (P-29):1986 RA 2019
30	Alkalinity (as CaCO ₃) mg/l, Max	24.0	200	600	IS:3025 (P-23):1986 RA 2019
31	Total Hardness (as CaCO ₃),mg/l, Max	20.0	200	600	IS:3025 (P-21):2009 RA 2019
32	Zinc (as Zn),mg/l, Max	<0.005	5	15	IS:3025 (P-2) 2019
33	Cadmium (as Cd),mg/l, Max	<0.001	0.003	0.003	IS:3025 (P-2)2019
34	Cyanide (as CN),mg/l, Max	<0.01	0.05	0.05	IS:3025 (P-27)Sec 1 2021
35	Lead (as Pb),mg/l, Max	<0.005	0.01	0.01	IS:3025 (P-2)2019
36	Mercury (as Hg),mg/l, Max	<0.0005	0.001	0.001	USPEA 200.7 Rev 4.4
37	Nickel (as Ni),mg/l, Max	<0.001	0.02	0.02	IS:3025 (P-2) 2019
38	Arsenic (as As),mg/l, Max	<0.002	0.01	0.01	IS:3025 (P-2)2019
39	Total Chromium (as Cr),mg/l, Max	<0.001	0.05	0.05	IS:3025 (P-52)2014
40	Escherichia coli/100ml	Not Detected	Shell Not be detected in any 100ml sample	Shell Not be detected in any 100ml sample	IS:15185:2016 RA 2021
41	Total Coliform (cfu/100ml)	Not Detected	Shell Not be detected in any 100ml sample	Shell Not be detected in any 100ml sample	IS:15185:2016 RA 2021

"END OF REPORT"

(Signature)
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TEST REPORT

Table No.23

Report No : N024724034

Name of the Client	: M/s. M/s. Sandur Manganese & Iron Ores Limited (Metal & Ferro Alloys Plant),
Name of the Project	: Vysanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist,
Particulars of sample collected	: GW2 - Vysanakere Village Bore water
Sample Collected by	: Environmental Laboratory Representative
Date of sample collection	: 16.03.2024
Date of sample receipt	: 17.03.2024
Lab Code	: N/24/03/4-0247
Issue Date	: 29.03.2024
Ref : IS:10500-2012 Norms Amendment - 4 (Drinking Water Standards)	

Sl. No.	Parameters	Results	Desirable Limits	Permissible Limits	Method of Testing
1	Colour (Hazen Units), Max	2	5	15	IS:3025 (P-4)2021
2	Odour, Max	Agreeable	Agreeable	Agreeable	IS:3025 (P-5) 2018
3	pH Value	8.11	6.5 to 8.5	6.5 - 8.5	IS:3025 (P-11)2022
4	Taste	Agreeable	Agreeable	Agreeable	IS:3025 (P- 8)1984 RA 2017
5	Turbidity,NTU, Max	1.8	1	5	IS:3025 (P-10)1984 RA2017
6	Electrical Conductivity (µmhos/cm)	980.0	--	--	IS 3025 (P-14)
7	Total Dissolved Solids,mg/l, Max	490	500	2000	IS:3025 (P-16)1984 RA2017
8	Aluminium (as Al), Max	<0.01	0.03	0.2	IS:3025 (P-55)2003 RA2019
9	Ammonia (as total Ammonia -N),mg/l, Max	<0.1	0.5	0.5	IS:3025 (P-34)1988 RA2019
10	Anionic Detergents (as MBAS),mg/l, Max	<0.1	0.2	1.0	Annex K of Is:13428Amm 11 2022
11	Barium (as Ba), mg/l, Max	<0.005	0.7	0.7	IS:3025(P-2)2019
12	Boron (as B), mg/l, Max	<0.1	0.5	2.4	IS:3025 (Part-57)2021
13	Calcium (as Ca),mg/l, Max	66.00	75	200	IS:3025 (P-40)1991 RA 2019
14	Copper (as Cu),mg/l, Max	<0.005	0.05	1.5	IS:3025 (P-2)2019
15	Chloride as Cl (mg/l),mg/l, Max	90.00	250	1000	IS:3025 (P-32)1988 RA 2019
16	Fluoride (as F),mg/l, Max	<0.1	1	1.5	IS:3025 (P-60)2008 RA 2019
17	Residual, Free Chlorine,mg/l, Max	<0.1	0.2	1	IS:3025 (P-26)2021
18	Chloramines as C12, Max	<0.1	4	4	IS:3025(P-26)2021
19	Iron (as Fe),mg/l, Max	<0.005	1.0	1.0	IS:3025 (Part-2)2019
20	Magnesium (as Mg),mg/l, Max	42.0	30	100	IS:3025 (P-46)1994 RA 2019
21	Manganese (as Mn),mg/l, Max	<0.001	0.1	0.3	IS:3025 (P-2)2019
22	Mineral Oil,mg/l, Max	<0.5	1.0	1.0	Clause 6 of IS 3025 (P-39) 2021
23	Nitrates (as NO ₃),mg/l, Max	6.90	45	45	IS:3025 (P-34) 1988 RA 2019
24	Phenolics (as C ₆ H ₅ OH),mg/l, Max	<0.001	0.001	0.002	IS:3025 (P-43)Sec 1 2022
25	Selenium (as Se),mg/l, Max	<0.005	0.01	0.01	IS:3025(P-2)2019
26	Silver (as Ag), mg/l, Max	<0.005	0.1	0.1	IS:3025(P-2)2019
27	Molybdenum (as Mo), mg/l, Max	<0.001	0.07	0.07	IS:3025 (P-2)2019
28	Sulphates (as SO ₄),mg/l, Max	58.00	200	400	IS:3025 (P-24) Sec 1 2022
29	Sulphide (as H ₂ S) , mg/l, Max	<0.01	0.05	0.05	IS:3025 (P-29):1986 RA 2019
30	Alkalinity (as CaCO ₃) mg/l, Max	300.0	200	600	IS:3025 (P-23):1986 RA 2019
31	Total Hardness (as CaCO ₃),mg/l, Max	326.0	200	600	IS:3025 (P-21):2009 RA 2019
32	Zinc (as Zn),mg/l, Max	<0.005	5	15	IS:3025 (P-2) 2019
33	Cadmium (as Cd),mg/l, Max	<0.001	0.003	0.003	IS:3025 (P-2)2019
34	Cyanide (as CN),mg/l, Max	<0.01	0.05	0.05	IS:3025 (P-27)Sec 1 2021
35	Lead (as Pb),mg/l, Max	<0.005	0.01	0.01	IS:3025 (P-2)2019
36	Mercury (as Hg),mg/l, Max	<0.0005	0.001	0.001	USPEA 200.7 Rev 4.4
37	Nickel (as Ni),mg/l, Max	<0.001	0.02	0.02	IS:3025 (P-2) 2019
38	Arsenic (as As),mg/l, Max	<0.002	0.01	0.01	IS:3025 (P-2)2019
39	Total Chromium (as Cr),mg/l, Max	<0.001	0.05	0.05	IS:3025 (P-52)2014
40	Escherichia coli/100ml	Not Detected	Shell Not be detected in any 100ml sample	Shell Not be detected in any 100ml sample	IS:15185:2016 RA 2021
41	Total Coliform (cfu/100ml)	Not Detected	Shell Not be detected in any 100ml sample	Shell Not be detected in any 100ml sample	IS:15185:2016 RA 2021

"END OF REPORT"

Arushi Kousar
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TEST REPORT

Table No.24

Report No : N024824034

Name of the Client	: M/s. M/s. Sandur Manganese & Iron Ores Limited (Metal & Ferro Alloys Plant),
Name of the Project	: Vyasankere, Hanumanahalli Village, Hospet Taluk, Ballari Dist,
Particulars of sample collected	: GW3 - Galemmanagudi Bore water
Sample Collected by	: Environmental Laboratory Representative
Date of sample collection	: 16.03.2024
Date of sample receipt	: 17.03.2024
Lab Code	: N/24/03/4-0248
Issue Date	: 29.03.2024
Ref	: IS:15000-2012 Norms Amendment - 4 (Drinking Water Standards)

Sl. No.	Parameters	Results	Desirable Limits	Permissible Limits	Method of Testing
1	Colour (Hazen Units), Max	<1	5	15	IS:3025 (P-4)2021
2	Odour, Max	Agreeable	Agreeable	Agreeable	IS:3025 (P-5) 2018
3	pH Value	7.96	6.5 to 8.5	6.5 - 8.5	IS:3025 (P-11)2022
4	Taste	Agreeable	Agreeable	Agreeable	IS:3025 (P-8)1984 RA 2017
5	Turbidity,NTU, Max	<0.1	1	5	IS:3025 (P-10)1984 RA2017
6	Electrical Conductivity (µmhos/cm)	2300	--	--	IS 3025 (P-14)
7	Total Dissolved Solids,mg/l, Max	1150	500	2000	IS:3025 (P-16)1984 RA2017
8	Aluminium (as Al), Max	<0.01	0.03	0.2	IS:3025 (P-55)2003 RA2019
9	Ammonia (as total Ammonia -N),mg/l, Max	<0.1	0.5	0.5	IS:3025 (P-34)1988 RA2019
10	Anionic Detergents (as MBAS),mg/l, Max	<0.1	0.2	1.0	Annex K of Is:13428Amm 11 2022
11	Barium (as Ba), mg/l, Max	<0.005	0.7	0.7	IS:3025(P-2)2019
12	Boron (as B), mg/l, Max	<0.1	0.5	2.4	IS:3025 (Part-57)2021
13	Calcium (as Ca),mg/l, Max	118.00	75	200	IS:3025 (P-40)1991 RA 2019
14	Copper (as Cu),mg/l, Max	<0.005	0.05	1.5	IS:3025 (P-2)2019
15	Chloride as Cl (mg/l),mg/l, Max	521.00	250	1000	IS:3025 (P-32)1988 RA 2019
16	Fluoride (as F),mg/l, Max	<0.1	1	1.5	IS:3025 (P-60)2008 RA 2019
17	Residual, Free Chlorine,mg/l, Max	<0.1	0.2	1	IS:3025 (P-26)2021
18	Chloramines as C12, Max	<0.1	4	4	IS:3025(P-26)2021
19	Iron (as Fe),mg/l, Max	0.040	1.0	1.0	IS:3025 (Part-2)2019
20	Magnesium (as Mg),mg/l, Max	132.0	30	100	IS:3025 (P-46)1994 RA 2019
21	Manganese (as Mn),mg/l, Max	<0.001	0.1	0.3	IS:3025 (P-2)2019
22	Mineral Oil,mg/l, Max	<0.5	1.0	1.0	Clause 6 of IS 3025 (P-39) 2021
23	Nitrates (as NO ₃),mg/l, Max	3.22	45	45	IS:3025 (P-34) 1988 RA 2019
24	Phenolics (as C ₆ H ₅ OH),mg/l, Max	<0.001	0.001	0.002	IS:3025 (P-43)Sec 1 2022
25	Selenium (as Se),mg/l, Max	<0.005	0.01	0.01	IS:3025(P-2)2019
26	Silver (as Ag), mg/l, Max	<0.005	0.1	0.1	IS:3025(P-2)2019
27	Molybdenum (as Mo), mg/l, Max	<0.001	0.07	0.07	IS:3025 (P-2)2019
28	Sulphates (as SO ₄),mg/l, Max	74.00	200	400	IS:3025 (P-24) Sec 1 2022
29	Sulphide (as H ₂ S) , mg/l, Max	<0.01	0.05	0.05	IS:3025 (P-29):1986 RA 2019
30	Alkalinity (as CaCO ₃) mg/l, Max	490.0	200	600	IS:3025 (P-23):1986 RA 2019
31	Total Hardness (as CaCO ₃),mg/l, Max	796.0	200	600	IS:3025 (P-21):2009 RA 2019
32	Zinc (as Zn),mg/l, Max	<0.005	5	15	IS:3025 (P-2) 2019
33	Cadmium (as Cd),mg/l, Max	<0.001	0.003	0.003	IS:3025 (P-2)2019
34	Cyanide (as CN),mg/l, Max	<0.01	0.05	0.05	IS:3025 (P-27)Sec 1 2021
35	Lead (as Pb),mg/l, Max	<0.005	0.01	0.01	IS:3025 (P-2)2019
36	Mercury (as Hg),mg/l, Max	<0.0005	0.001	0.001	USPEA 200.7 Rev 4.4
37	Nickel (as Ni),mg/l, Max	<0.001	0.02	0.02	IS:3025 (P-2) 2019
38	Arsenic (as As),mg/l, Max	<0.002	0.01	0.01	IS:3025 (P-2)2019
39	Total Chromium (as Cr),mg/l, Max	<0.001	0.05	0.05	IS:3025 (P-52)2014
40	Escherichia coli/100ml	Not Detected	Shell Not be detected in any 100ml sample	Shell Not be detected in any 100ml sample	IS:15185:2016 RA 2021
41	Total Coliform (cfu/100ml)	Not Detected	Shell Not be detected in any 100ml sample	Shell Not be detected in any 100ml sample	IS:15185:2016 RA 2021

"END OF REPORT"

BINUMANI **ARSHIYA KOUSAR**

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TEST REPORT

Table No.25

Report No : N024924034

Name of the Client	: M/s. M/s. Sandur Manganese & Iron Ores Limited (Metal & Ferro Alloys Plant),
Name of the Project	: Vyasankere, Hanumanahalli Village, Hospet Taluk, Ballari Dist,
Particulars of sample collected	: GW4 - Hanumanahalli Bore water
Sample Collected by	: Environmental Laboratory Representative
Date of sample collection	: 16.03.2024
Date of sample receipt	: 17.03.2024
Lab Code	: N/24/03/4-0249
Issue Date	: 29.03.2024
Ref : IS:10500-2012 Norms Amendment - 4 (Drinking Water Standards)	

Sl. No.	Parameters	Results	Desirable Limits	Permissible Limits	Method of Testing
1	Colour (Hazen Units), Max	1	5	15	IS:3025 (P-4)2021
2	Odour, Max	Agreeable	Agreeable	Agreeable	IS:3025 (P-5) 2018
3	pH Value	7.82	6.5 to 8.5	6.5 - 8.5	IS:3025 (P-11)2022
4	Taste	Agreeable	Agreeable	Agreeable	IS:3025 (P-8)1984 RA 2017
5	Turbidity, NTU, Max	3.20	1	5	IS:3025 (P-10)1984 RA2017
6	Electrical Conductivity (µmhos/cm)	3240.0	--	--	IS 3025 (P-14)
7	Total Dissolved Solids, mg/l, Max	1620	500	2000	IS:3025 (P-16)1984 RA2017
8	Aluminium (as Al), Max	<0.01	0.03	0.2	IS:3025 (P-55)2003 RA2019
9	Ammonia (as total Ammonia -N), mg/l, Max	<0.1	0.5	0.5	IS:3025 (P-34)1988 RA2019
10	Anionic Detergents (as MBAS), mg/l, Max	<0.1	0.2	1.0	Annex K of IS:13428Amm 11 2022
11	Barium (as Ba), mg/l, Max	<0.005	0.7	0.7	IS:3025 (P-2)2019
12	Boron (as B), mg/l, Max	<0.1	0.5	2.4	IS:3025 (Part-57)2021
13	Calcium (as Ca), mg/l, Max	72.00	75	200	IS:3025 (P-40)1991 RA 2019
14	Copper (as Cu), mg/l, Max	0.051	0.05	1.5	IS:3025 (P-2)2019
15	Chloride as Cl (mg/l), mg/l, Max	580.00	250	1000	IS:3025 (P-32)1988 RA 2019
16	Fluoride (as F), mg/l, Max	0.23	1	1.5	IS:3025 (P-60)2008 RA 2019
17	Residual, Free Chlorine, mg/l, Max	<0.1	0.2	1	IS:3025 (P-26)2021
18	Chloramines as C12, Max	<0.1	4	4	IS:3025 (P-26)2021
19	Iron (as Fe), mg/l, Max	0.080	1.0	1.0	IS:3025 (Part-2)2019
20	Magnesium (as Mg), mg/l, Max	112.00	30	100	IS:3025 (P-46)1994 RA 2019
21	Manganese (as Mn), mg/l, Max	<0.001	0.1	0.3	IS:3025 (P-2)2019
22	Mineral Oil, mg/l, Max	<0.5	1.0	1.0	Clause 6 of IS 3025 (P-39) 2021
23	Nitrates (as NO ₃), mg/l, Max	20.12	45	45	IS:3025 (P-34) 1988 RA 2019
24	Phenolics (as C ₆ H ₅ OH), mg/l, Max	<0.001	0.001	0.002	IS:3025 (P-43)Sec 1 2022
25	Selenium (as Se), mg/l, Max	<0.005	0.01	0.01	IS:3025 (P-2)2019
26	Silver (as Ag), mg/l, Max	<0.005	0.1	0.1	IS:3025 (P-2)2019
27	Molybdenum (as Mo), mg/l, Max	<0.001	0.07	0.07	IS:3025 (P-2)2019
28	Sulphates (as SO ₄), mg/l, Max	160.0	200	400	IS:3025 (P-24) Sec 1 2022
29	Sulphide (as H ₂ S), mg/l, Max	<0.01	0.05	0.05	IS:3025 (P-29):1986 RA 2019
30	Alkalinity (as CaCO ₃), mg/l, Max	660.0	200	600	IS:3025 (P-23):1986 RA 2019
31	Total Hardness (as CaCO ₃), mg/l, Max	670.0	200	600	IS:3025 (P-21):2009 RA 2019
32	Zinc (as Zn), mg/l, Max	<0.005	5	15	IS:3025 (P-2) 2019
33	Cadmium (as Cd), mg/l, Max	<0.001	0.003	0.003	IS:3025 (P-2)2019
34	Cyanide (as CN), mg/l, Max	<0.01	0.05	0.05	IS:3025 (P-27)Sec 1 2021
35	Lead (as Pb), mg/l, Max	<0.005	0.01	0.01	IS:3025 (P-2)2019
36	Mercury (as Hg), mg/l, Max	<0.0005	0.01	0.001	USPEA 200.7 Rev 4.4
37	Nickel (as Ni), mg/l, Max	<0.001	0.02	0.02	IS:3025 (P-2) 2019
38	Arsenic (as As), mg/l, Max	<0.002	0.01	0.01	IS:3025 (P-2)2019
39	Total Chromium (as Cr), mg/l, Max	<0.001	0.05	0.05	IS:3025 (P-52)2014
40	Escherichia coli/100ml	Not Detected	Shell Not be detected in any 100ml sample	Shell Not be detected in any 100ml sample	IS:15185:2016 RA 2021
41	Total Coliform (cfu/100ml)	Not Detected	Shell Not be detected in any 100ml sample	Shell Not be detected in any 100ml sample	IS:15185:2016 RA 2021

"END OF REPORT"

(Signature)
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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

Report No : N025024034

Name of the Client	: M/s. Sandur Manganese & Iron Ores Limited				
Name of the Project	: Iron & Steel Plant at Vysanakere village, Hosapete Taluk, Ballari District, Karnataka				
Particulars of sample collected	: 50 KLD STP Water				
Date of sample collection	: 18.03.2024				
Lab Code	: N/24/03/4-0250				
Issue Date	: 29.03.2024				
Sl. No.	Parameters	units	Results	Sewage Effluent Discharge Standards	Method of Testing
1	pH	-	7.88	6.0 to 8.5	IS 3025 (P-11)2017
3	Total Suspended Solids, at 105°C	mg/l	16	100	IS 3025 (P-16)1984 RA 2017
2	Biochemical Oxygen Demand BOD ₅ 27°C	mg/l	14	30	IS 3025 (P-44) 1993 RA 2019
3	Chemical Oxygen Demand (COD)	mg/l	8	250	IS 3025 (P-58) 2006 RA 2017
4	Total Kjeldahl Nitrogen,	mg/l	<1	-	IS 3025 (Part-34)
5	Fecal coliform	MPN/100ml	Absent	<1000	IS:15185 :2016 RA 2021

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