

The Sandur Manganese & Iron Ores

(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
Fax: +91 8395 260473



CORPORATE OFFICE

'SANDUR HOUSE', No.9
Bellary Road, Sadashivanagar
Bengaluru - 560 080
Karnataka, India
Tel: +91 80 4152 0176 - 79 / 4547 3000
Fax: +91 80 4152 0182

No: SMIORE/Mn/2024-25/2679/1325

07 January 2025

The Environmental Officer,
Karnataka State Pollution Control Board,
Ward No.25, 4th Main Road,
Kuvempu Nagar,
Ballari - 583104

Dear Sir,

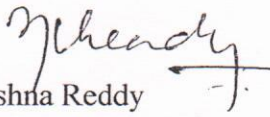
Sub: Submission of reports pertaining to monitoring of environmental parameters for the month of December 2024 in respect of Mining Lease No. 2679.

Ref: 1. EC Identification No. EC24B0000KA5391575N dated 01 September 2024.
2. Consent for Operation No. AW-337273 dated 10 April 2023.

With reference to the letter cited above, we are enclosing herewith environmental monitoring reports from NABET accredited and MoEFCC empaneled laboratory M/s Mineral Engineering Services as per stipulated environmental parameters in Environmental Clearance and Consent for Operation-Expansion for the month of December 2024 in respect of Mining Lease No. 2679, Ramghad Manganese & Iron Ore Mine of The Sandur Manganese & Iron Ores Limited.

Kindly request you to acknowledge receipt of the reports and oblige.

Thank you,
for The Sandur Manganese & Iron Ores Limited,


Krishna Reddy
Vice President - Mines



Encl: Monitoring Reports



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, Ballari District

ENVIRONMENTAL MONITORING REPORT

December, 2024

**Project : Ramgad Manganese Ore Mine
ML No. 2679**

**Ramgad Village, Sandur Taluk,
Ballari Dist., Karnataka.**

Lessee

The Sandur Manganese & Iron Ores Limited

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

TEST REPORT

Table No.1

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited						
Name of the Project : Mining Lease No. 2679						
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)						
Station at & Code : A1, Core Zone (ML Area)						
Duration : 24 Hrs						
Issue date : 02.01.2025						
Reference IS 5182 & Lab SOP						
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
06.12.2024	N/24/12/3-0089	7	12	34	18	0.22
07.12.2024	N/24/12/3-0179	8	12	44	24	0.32
13.12.2024	N/24/12/4-0162	9	11	56	28	0.25
14.12.2024	N/24/12/4-0216	11	14	54	26	0.21
16.12.2024	N/24/12/5-0001	9	11	47	24	0.28
17.12.2024	N/24/12/5-0041	11	12	37	21	0.42
25.12.2024	N/24/12/6-0151	8	9	49	27	0.36
26.12.2024	N/24/12/6-0178	10	16	38	19	0.21
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	2 8 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

Name of the Client : The Sandur Manganese & Iron Ores Limited						
Name of the Project : Mining Lease No. 2679						
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)						
Station at & Code : A2, Core Zone (Myadara Banda Block)						
Duration : 24 Hrs						
Issue date : 02.01.2025						
Reference IS 5182 & Lab SOP						
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
06.12.2024	N/24/12/3-0091	6	9	45	25	0.36
07.12.2024	N/24/12/3-0181	9	11	50	28	0.33
13.12.2024	N/24/12/4-0164	11	13	38	21	0.28
14.12.2024	N/24/12/4-0218	9	13	48	25	0.24
16.12.2024	N/24/12/5-0003	8	12	54	27	0.23
17.12.2024	N/24/12/5-0043	10	12	41	23	0.22
25.12.2024	N/24/12/6-0153	9	13	51	26	0.35
26.12.2024	N/24/12/6-0180	9	10	37	16	0.28
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	2 8 Hr

Arshiya Kousar
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TEST REPORT

Table No.3

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited						
Name of the Project : Mining Lease No. 2679						
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)						
Station at & Code : A3, Core Zone (Governor Point)						
Duration : 24 Hrs						
Issue date : 02.01.2025						
Reference IS 5182 & Lab SOP						
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
06.12.2024	N/24/12/3-0092	10	12	50	28	0.22
07.12.2024	N/24/12/3-0182	12	14	47	22	0.35
13.12.2024	N/24/12/4-0165	6	18	57	30	0.38
14.12.2024	N/24/12/4-0219	8	12	54	28	0.31
16.12.2024	N/24/12/5-0004	10	11	47	25	0.24
17.12.2024	N/24/12/5-0044	9	10	53	28	0.22
25.12.2024	N/24/12/6-0154	11	14	39	21	0.28
26.12.2024	N/24/12/6-0181	7	12	40	24	0.24
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	2 8 Hr

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TEST REPORT

Table No.4

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited						
Name of the Project : Mining Lease No. 2679						
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)						
Station at & Code : A4, Core Zone (Neerlabi)						
Duration : 24 Hrs						
Issue date : 02.01.2025						
Reference IS 5182 & Lab SOP						
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
06.12.2024	N/24/12/3-0093	9	10	48	26	0.26
07.12.2024	N/24/12/3-0183	8	12	54	27	0.33
13.12.2024	N/24/12/4-0166	10	11	51	26	0.30
14.12.2024	N/24/12/4-0220	8	13	41	22	0.26
16.12.2024	N/24/12/5-0005	11	14	56	30	0.24
17.12.2024	N/24/12/5-0045	6	9	53	27	0.20
25.12.2024	N/24/12/6-0155	10	16	40	23	0.25
26.12.2024	N/24/12/6-0182	9	16	48	26	0.44
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	2 8 Hr

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Table No.5

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited						
Name of the Project : Mining Lease No. 2679						
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)						
Station at & Code : A5, Ramghad village						
Duration : 24 Hrs						
Issue date : 02.01.2025						
Reference IS 5182 & Lab SOP						
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
06.12.2024	N/24/12/3-0094	9	11	35	18	0.28
07.12.2024	N/24/12/3-0184	11	12	40	26	0.35
13.12.2024	N/24/12/4-0167	7	12	55	32	0.36
14.12.2024	N/24/12/4-0221	11	15	45	26	0.21
16.12.2024	N/24/12/5-0006	7	9	52	29	0.24
17.12.2024	N/24/12/5-0046	11	15	50	26	0.28
25.12.2024	N/24/12/6-0156	12	18	48	26	0.36
26.12.2024	N/24/12/6-0183	11	12	34	21	0.25
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	2 8 Hr

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TEST REPORT

Table No.6

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited						
Name of the Project : Mining Lease No. 2679						
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)						
Station at & Code : A6, Dharmapura village						
Duration : 24 Hrs						
Issue date : 02.01.2025						
Reference IS 5182 & Lab SOP						
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
06.12.2024	N/24/12/3-0095	11	16	42	26	0.28
07.12.2024	N/24/12/3-0185	12	15	51	26	0.26
13.12.2024	N/24/12/4-0168	5	13	56	32	0.31
14.12.2024	N/24/12/4-0222	9	12	42	22	0.28
16.12.2024	N/24/12/5-0007	8	14	50	26	0.22
17.12.2024	N/24/12/5-0047	9	11	47	26	0.45
25.12.2024	N/24/12/6-0157	9	12	54	28	0.36
26.12.2024	N/24/12/6-0184	11	18	53	27	0.35
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	2 8 Hr

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TEST REPORT

Table No.7

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited						
Name of the Project : Mining Lease No. 2679						
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)						
Station at & Code : A7, Garaga village						
Duration : 24 Hrs						
Issue date : 02.01.2025						
Reference IS 5182 & Lab SOP						
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
06.12.2024	N/24/12/3-0096	6	9	38	21	0.22
07.12.2024	N/24/12/3-0186	5	9	50	28	0.21
13.12.2024	N/24/12/4-0169	10	9	44	24	0.25
14.12.2024	N/24/12/4-0223	9	10	48	26	0.27
16.12.2024	N/24/12/5-0008	9	11	37	20	0.26
17.12.2024	N/24/12/5-0048	13	15	49	24	0.33
25.12.2024	N/24/12/6-0158	9	13	52	28	0.27
26.12.2024	N/24/12/6-0185	12	15	45	23	0.24
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	2 8 Hr

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TEST REPORT

Table No.8

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited						
Name of the Project : Mining Lease No. 2679						
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)						
Station at & Code : A8, Yeswanthanagar						
Duration : 24 Hrs						
Issue date : 02.01.2025						
Reference IS 5182 & Lab SOP						
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
06.12.2024	N/24/12/3-0085	10	11	47	20	0.22
07.12.2024	N/24/12/3-0176	10	16	37	20	0.45
09.12.2024	N/24/12/4-0014	12	15	56	30	0.48
10.12.2024	N/24/12/4-0072	9	12	49	27	0.32
20.12.2024	N/24/12/5-0148	7	11	54	28	0.28
21.12.2024	N/24/12/5-0228	11	14	50	24	0.23
23.12.2024	N/24/12/6-0029	10	18	47	23	0.21
24.12.2024	N/24/12/6-0092	12	15	55	27	0.33
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	2 8 Hr

Arshiya Kousar
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TEST REPORT

Table No.9

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited						
Name of the Project : Mining Lease No. 2679						
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)						
Station at & Code : A9, Subbarayanahalli						
Duration : 24 Hrs						
Issue date : 02.01.2025						
Reference IS 5182 & Lab SOP						
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
06.12.2024	N/24/12/3-0081	7	9	45	26	0.24
07.12.2024	N/24/12/3-0172	7	11	39	20	0.23
09.12.2024	N/24/12/4-0010	8	14	50	27	0.22
10.12.2024	N/24/12/4-0068	10	12	47	25	0.38
20.12.2024	N/24/12/5-0144	9	12	37	19	0.27
21.12.2024	N/24/12/5-0224	9	17	42	23	0.21
23.12.2024	N/24/12/6-0025	11	12	50	27	0.31
24.12.2024	N/24/12/6-0088	11	11	40	22	0.27
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	2 8 Hr

Arshiya Kousar
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TEST REPORT

Table No.10

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited						
Name of the Project : Mining Lease No. 2679						
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)						
Station at & Code : A10, Siddapura village						
Duration : 24 Hrs						
Issue date : 02.01.2025						
Reference IS 5182 & Lab SOP						
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
06.12.2024	N/24/12/3-0091	6	9	45	25	0.36
07.12.2024	N/24/12/3-0181	9	11	50	28	0.33
13.12.2024	N/24/12/4-0164	11	13	38	21	0.28
14.12.2024	N/24/12/4-0218	9	13	48	25	0.24
16.12.2024	N/24/12/5-0003	8	12	54	27	0.23
17.12.2024	N/24/12/5-0043	10	12	41	23	0.22
25.12.2024	N/24/12/6-0153	9	13	51	26	0.35
26.12.2024	N/24/12/6-0180	9	10	37	16	0.28
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	2 8 Hr

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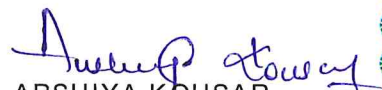
Recognised by MoEFCC(CPCB) under E(P) Act 1986 recognition valid upto 23.05.2025

TEST REPORT

Table No. 11

Fugitive Emission

Name of the Client : The Sandur Manganese & Iron Ores Limited Name of the Project : Mining Lease No. 2679 Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services) Duration : 08 Hrs Issue Date : 02.01.2025			
Station at & Code	Date of sample	Lab Code	Particulate mater ($\mu\text{g}/\text{m}^3$)
FA1, Loading point	13.12.2024	N/24/12/4-0170	286
FA2, Dumping point	13.12.2024	N/24/12/4-0171	433
FA3, Haulage Road	13.12.2024	N/24/12/4-0172	489
FA4, Stack Yard	14.12.2024	N/24/12/4-0224	352
FA5, Drilling Point	14.12.2024	N/24/12/4-0225	496
FA6, Waste Dumping Point	14.12.2024	N/24/12/4-0226	455
Ref : Environmental (Protection) Rules, 2010 (Sixth Amendment) Particulate mater ($\mu\text{g}/\text{m}^3$) Permissible limits for Fugitive Emissions 600 $\mu\text{g}/\text{m}^3$			


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TEST REPORT

Table No. 12

Analysis Report of Dust Fall Measurement

1	Name of the Client	The Sandur Manganese & Iron Ores Limited
2	Name of the Project	Mining Lease No. 2679
3	Month	01.12.2024 to 31.12.2024
4	Sample Type	Total Dust Fall Rate
5	Duration of Monitoring	One Month
6	Issue Date	02.01.2025

Result

Code	Location	Result	unit	Reference Method
DF1	Mine Office Area	0.021	g/m ² month	IS 5182 (Part 01) : 2006
DF2	Near Crusher Area	0.027	g/m ² month	IS 5182 (Part 01) : 2006

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TEST REPORT

Table No. 13

AMBIENT NOISE LEVEL DATA

Report No : ELMES092412

Name of the Client	: The Sandur Manganese & Iron Ores Limited
Name of the Project	: Mining Lease No. 2679
Sample Collected by	: Environmental Laboratory (Unit of Mineral Engineering Services)
Date of monitoring	: 13.12.2024
Issue Date	: 02.01.2025

Code No.	Monitoring stations	Day			Night		
		L _{min}	L _{eq}	L _{max}	L _{min}	L _{eq}	L _{max}
Corezone							
N1	Core zone ML Area	38.0	54.5	62.2	34.0	42.9	47.5
N2	Myadara Banda Block	37.6	50.2	58.4	34.8	41.6	45.8
N3	Goerner Point	41.0	55.8	63.8	35.2	41.6	48.0
N4	Neerlabbi	43.0	55.0	60.0	34.0	46.2	52.0
Buffer zone							
N5	Ramgad village	36.0	50.9	57.3	34.0	41.8	46.5
N6	Dharmapura	37.0	49.2	54.2	35.0	41.3	47.2
N7	Garaga village	35.0	45.7	51.3	33.0	38.1	43.8
N8	Yeshwanthanagar	39.0	53.0	58.6	34.0	41.3	48.0
N9	Subbarayanahalli	37.8	50.6	57.6	35.3	41.2	44.3
N10	Siddapura	41.0	50.5	57.3	35.0	43.1	46.8
<u>Permissible Limits of Ambient Noise Levels as per CPCB Guidelines</u>							
		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. 14

NOISE LEVEL DATA

Report No : ELMES102412

Name of the Client	: M/s. Sandur Manganese & Iron Ores Limited
Name of the Project	: Mining Lease No. 2679
Sample Collected by	: Environmental Laboratory (Unit of Mineral Engineering Services)
Date of monitoring	: 14.12.2024
Issue Date	: 02.01.2025

Code No.	Monitoring stations	Day			Remarks
		L _{min}	L _{eq}	L _{max}	
Source					
N1	Loading Point	42.3	66.3	75.3	During operation
N2	Dumping Point	44.9	71.6	80.0	During operation
N3	Haulage Road	46.3	69.9	75.0	During operation

Heavy Earth Moving Machineries

N4	Wheel Loader	42.0	81.0	86.5	During operation in side of the cabin
		40.0	74.1	78.0	During operation 10mts outside of the cabin
N5	Tata Hitachi 200LC	42.0	76.9	84.0	During operation in side of the cabin
		39.0	74.3	80.0	During operation 10mts outside of the cabin

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.15

Table No. 1

Name of the Client	: The Sandur Manganese & Iron Ores Limited						
Name of the Project	: Mining Lease No. 2679						
Sample Collected by	: Environmental Laboratory (Unit of Mineral Engineering Services)						
Particulars of sample collected	: SW1 - Ragavapura kere water, SW2 - Dhananayakana kere water						
	: SW3 - Narihalla Upstream water, SW4 - Narihalla Downstream water						
Date of sample collection	: 17.12.2024						
Issue Date	: 31.12.2024						
Ref:IS : 2296, 1982 Class C Norms (Stream Water Standards)							
	Sample Code	SW1	SW2	SW3	SW4	Limits For Stream Water Standards	Method of Testing
Sl.No.	Lab Code	N/24/12/4-0282	N/24/12/4-0283	N/24/12/4-0284	N/24/12/4-0285		
	Parameters	Results					
1	pH	7.95	8.10	8.11	7.83	6.5 to 8.5	IS:3025(Part-11)2022
2	Colour (Hazen Units), Max	5	15	10	5	300	IS:3025(Part-4)2021
3	Odour	Agreeable	Agreeable	Agreeable	Agreeable	-	IS:3025 (P-5) 2018
4	Total Dissolved Solids (mg/l), Max	600	592	740	746	1500	IS:3025(Part-16)2023
5	Total Suspended Solids, mg/l	80	160	78	80	-	IS 3025 (P-17) 2022
6	Dissolved Oxygen (as O ₂), mg/l, Max	5.2	5.1	5.1	5.0	Min 4	IS:3025(Part-38)1989RA 2019
7	Biochemical Oxygen Demand (as O ₂), mg/l	<3.0	<3.0	<3.0	<3.0	3	IS:3025(P-44) 2014
8	Oil & Grease, mg/l	<0.1	<0.1	<0.1	<0.1	0.1	IS:3025(Part 39)2021
9	Total Hardness (as CaCO ₃),mg/l,Max	250	290	360	370	-	IS:3025 (P-21):2009 RA 2019
10	Sulphates as SO ₄ (mg/l), Max	57	72	64.0	69	400	IS:3025(P-24)Sec 1 2022
11	Phosphates (as P), mg/l	<0.05	<0.05	<0.05	<0.05	-	IS 3025 (P-31) Sec 1 2022
12	Chloride (as Cl),mg/l, Max	155	130	220.0	205	600	IS:3025(Part-32) ;1988RA2019
13	Fluoride (as F),mg/l, Max	0.48	0.37	0.75	0.70	1.5	APHA 23rd Edition 4500F
14	Sulphide (as H ₂ S) , mg/l, Max	<0.01	<0.01	<0.01	<0.01	-	IS:3025 (P-29):1986 RA 2019
15	Boron (as B), mg/l, Max	<0.1	<0.1	<0.1	<0.1	-	IS:3025 (Part-57)2021
16	Iron (as Fe),mg/l, Max	<0.005	<0.005	<0.005	<0.005	50	IS:3025(P-2) 2019
17	Percent of Sodium (%)	14.5	12.6	22.00	24.00	-	IS 11624 .2009
18	Residual Sodium Carbonate (meq/l)	<0.05	<0.05	<0.05	<0.05	-	IS:2488 (P-5) 1976
19	Total Coliform, MPN/100ml	110	130	180	226	5000	IS:1622:1981

"END OF REPORT"



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TEST REPORT

Table No. 16

Name of the Client		: The Sandur Manganese & Iron Ores Limited					
Name of the Project		: Mining Lease No. 2679					
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services)					
Particulars of sample collected		: GW1 - Project Site Core Zone Borewell water, GW2 - Ramghad Bore water, GW3 - Dharmapura Bore water					
Issue Date		: 31.12.2024					
Ref : IS:10500-2012 Norms Amendment - 4 (Drinking Water Standards)							
Date of sample collection		17.12.2024	17.12.2024	17.12.2024	Desirable Limits	Permissible Limits	Method of Testing
Lab Code		N/24/12/4-0286	N/24/12/4-0287	N/24/12/4-0288			
Sl. No.	Sample Code	GW1	GW2	GW3			
	Parameters	Results					
1	Colour (Hazen Units)	5	3	3	5	15	IS:3025 (P-4) 2021
2	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	IS:3025 (P-5) 2018
3	pH Value	6.70	7.92	7.83	6.5 to 8.5	6.5 - 8.5	IS:3025 (P-11) 2022
4	Turbidity, NTU, Max	68.5	3.4	8.60	1	5	IS:3025 (P-10)1984 RA 2017
5	Electrical Conductivity (µmhos/cm)	220.0	2200.0	1200.0	—	—	IS 3025 (P-14)
6	Total Dissolved Solids, mg/l, Max	120.0	1300.0	672.0	500	2000	IS:3025 (P-16)1984 RA2017
7	Aluminium (as Al), Max	<0.005	<0.005	<0.005	0.03	0.2	IS:3025 (P-2)2019
8	Boron (as B), mg/l, Max	<0.1	<0.1	<0.1	0.5	2.4	IS:3025 (Part-57)2021
9	Calcium (as Ca), mg/l, Max	2.40	112.20	108.20	75	200	IS:3025 (P-40)1991 RA 2019
10	Copper (as Cu), mg/l, Max	<0.005	<0.005	<0.005	0.05	1.5	IS:3025 (P-2)2019
11	Chloride as Cl (mg/l), mg/l, Max	20.00	400.00	80.00	250	1000	IS:3025 (P-32) 1988 RA 2019
12	Fluoride (as F), mg/l, Max	0.60	0.67	0.55	1	1.5	IS:3025 (P-60) 2008 RA 2019
13	Iron (as Fe), mg/l, Max	<0.005	<0.005	<0.005	1.0	1.0	IS:3025 (Part-2) 2019
14	Magnesium (as Mg), mg/l, Max	1.00	87.50	55.90	30	100	IS:3025 (P-46)1994 RA 2019
15	Manganese (as Mn), mg/l, Max	<0.001	<0.001	<0.001	0.1	0.3	IS:3025 (P-2) 2019
16	Nitrates (as NO ₃), mg/l, Max	7.50	38.00	25.20	45	45	IS:3025 (P-34) Sec 1 2023
17	Selenium (as Se), mg/l	<0.005	<0.005	<0.005	0.01	0.01	IS:3025(P-2) 2019
18	Sulphates (as SO ₄), mg/l, Max	15.00	105.00	71.00	200	400	IS:3025 (P-24) Sec 1 2022
19	Alkalinity (as CaCO ₃) mg/l, Max	80.0	480.0	470.0	200	600	IS:3025 (P-23):1986 RA 2019
20	Total Hardness (as CaCO ₃), mg/l, Max	10.0	640.0	500.0	200	600	IS:3025 (P-21):2009 RA 2019
21	Zinc (as Zn), mg/l, Max	<0.005	<0.005	<0.005	5	15	IS:3025 (P-2) 2019
22	Sodium, (as Na), mg/l, Max	5.36	22	18.5	—	—	IS:3025 (Part-45) 1993 RA2019
23	Potassium, (as K), mg/l, Max	1.48	4.9	2.4	—	—	IS:3025 (Part-45) 1993 RA2019
24	Cadmium (as Cd), mg/l, Max	<0.001	<0.001	<0.001	0.003	0.003	IS:3025 (P-2) 2019
25	Cyanide (as CN), mg/l, Max	<0.01	<0.01	<0.01	0.05	0.05	IS:3025 (P-27)Sec 1 2021
26	Lead (as Pb), mg/l, Max	<0.005	<0.005	<0.005	0.01	0.01	IS:3025 (P-2) 2019
27	Mercury (as Hg), mg/l, Max	<0.0005	<0.0005	<0.0005	0.001	0.001	USPEA 200.7 Rev 4.4
28	Arsenic (as As), mg/l, Max	<0.002	<0.002	<0.002	0.01	0.01	IS:3025 (P-2) 2019
29	Total Chromium (as Cr), mg/l, Max	<0.001	<0.001	<0.001	0.05	0.05	IS:3025 (P-52) 2014
30	Escherichia coli/100ml	Not Detected	Not Detected	Not Detected	Shall not be detectable in any 100ml Sample		IS:15185:2016 RA 2021
31	Total Coliform /100ml	Not Detected	Not Detected	Not Detected			IS:15185:2016 RA 2021

"END OF REPORT"



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TEST REPORT

Table No. 17

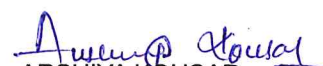
Name of the Client		: The Sandur Manganese & Iron Ores Limited					
Name of the Project		: Mining Lease No. 2679					
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services)					
Particulars of sample collected		: GW4 - Garaga Bore water, GW5 - Yeshwanthnagar Bore water, GW6 - Subbarayanahalli Bore water					
Issue Date		: 31.12.2024					
Ref : IS:10500-2012 Norms Amendment - 4 (Drinking Water Standards)							
Date of sample collection		17.12.2024	07.12.2024	07.12.2024	Desirable Limits	Permissible Limits	Method of Testing
Lab Code		N/24/12/4-0289	N/24/12/3-0291	N/24/12/3-0290			
Sample Code		GW4	GW5	GW6			
Sl. No.	Parameters	Results					
1	Colour (Hazen Units)	3	1	1	5	15	IS:3025 (P-4) 2021
2	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	IS:3025 (P-5) 2018
3	pH Value	7.87	7.72	7.56	6.5 to 8.5	6.5 - 8.5	IS:3025 (P-11) 2022
4	Turbidity, NTU, Max	4.5	1.6	4.0	1	5	IS:3025 (P-10) 1984 RA 2017
5	Electrical Conductivity (µmhos/cm)	2200.0	2300.0	420.0	--	--	IS 3025 (P-14)
6	Total Dissolved Solids, mg/l, Max	1320.0	1350.0	230.0	500	2000	IS:3025 (P-16) 1984 RA 2017
7	Aluminium (as Al), Max	<0.005	<0.005	<0.005	0.03	0.2	IS:3025 (P-2) 2019
8	Boron (as B), mg/l, Max	<0.1	<0.1	<0.1	0.5	2.4	IS:3025 (Part-57) 2021
9	Calcium (as Ca), mg/l, Max	120.20	128.20	30.40	75	200	IS:3025 (P-40) 1991 RA 2019
10	Copper (as Cu), mg/l, Max	<0.005	<0.005	<0.005	0.05	1.5	IS:3025 (P-2) 2019
11	Chloride as Cl (mg/l), mg/l, Max	340.00	460.00	40.00	250	1000	IS:3025 (P-32) 1988 RA 2019
12	Fluoride (as F), mg/l, Max	0.55	0.85	0.40	1	1.5	IS:3025 (P-60) 2008 RA 2019
13	Iron (as Fe), mg/l, Max	<0.005	<0.005	<0.005	1.0	1.0	IS:3025 (Part-2) 2019
14	Magnesium (as Mg), mg/l, Max	73.00	97.20	24.30	30	100	IS:3025 (P-46) 1994 RA 2019
15	Manganese (as Mn), mg/l, Max	<0.001	<0.001	<0.001	0.1	0.3	IS:3025 (P-2) 2019
16	Nitrates (as NO ₃), mg/l, Max	32.00	72.00	18.50	45	45	IS:3025 (P-34) Sec 1 2023
17	Selenium (as Se), mg/l	<0.005	<0.005	<0.005	0.01	0.01	IS:3025 (P-2) 2019
18	Sulphates (as SO ₄), mg/l, Max	158.00	110.00	38.00	200	400	IS:3025 (P-24) Sec 1 2022
19	Alkalinity (as CaCO ₃), mg/l, Max	460.0	360.0	110.0	200	600	IS:3025 (P-23):1986 RA 2019
20	Total Hardness (as CaCO ₃), mg/l, Max	570.0	720.0	175.0	200	600	IS:3025 (P-21):2009 RA 2019
21	Zinc (as Zn), mg/l, Max	<0.005	<0.005	<0.005	5	15	IS:3025 (P-2) 2019
22	Sodium, (as Na), mg/l, Max	24	130	12.5	--	--	IS:3025 (Part-45) 1993 RA 2019
23	Potassium, (as K), mg/l, Max	3.5	7.8	5.6	--	--	IS:3025 (Part-45) 1993 RA 2019
24	Cadmium (as Cd), mg/l, Max	<0.001	<0.001	<0.001	0.003	0.003	IS:3025 (P-2) 2019
25	Cyanide (as CN), mg/l, Max	<0.01	<0.01	<0.01	0.05	0.05	IS:3025 (P-27) Sec 1 2021
26	Lead (as Pb), mg/l, Max	<0.005	<0.005	<0.005	0.01	0.01	IS:3025 (P-2) 2019
27	Mercury (as Hg), mg/l, Max	<0.0005	<0.0005	<0.0005	0.001	0.001	USPEA 200.7 Rev 4.4
28	Arsenic (as As), mg/l, Max	<0.002	<0.002	<0.002	0.01	0.01	IS:3025 (P-2) 2019
29	Total Chromium (as Cr), mg/l, Max	<0.001	<0.001	<0.001	0.05	0.05	IS:3025 (P-52) 2014
30	Escherichia coli/100ml	Not Detected	Not Detected	Not Detected	Shall not be detectable in any 100ml Sample		IS:15185:2016 RA 2021
31	Total Coliform /100ml	Not Detected	Not Detected	Not Detected			IS:15185:2016 RA 2021

"END OF REPORT"


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TEST REPORT

Table No. 18

Stack Monitoring Report

Report No.N027924124

Name of the Client :	The Sandur Manganese & Iron Ores Limited
Name of the Mine :	RAMGAD MANGANESE & IRON ORE MINE (ML NO. 2679)
Location :	Mining Lease No. 2679
Stack ID & Capacity :	DG Set 35 KVA Ramgad-KK1 Mines
Sample Collected by :	Environmental Laboratory (Unit of Mineral Engineering Services)
Date of Collection :	14.12.2024
Particulars of Sample Collected :	Emissions from stack collected through stack sample VSS1
Date of Sample Receipt :	15.12.2024
Lab Code :	N/24/12/4-0279
Issue date :	02.01.2025

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature (°C)	30
3	Stack Temperature (°C)	138
4	Velocity (m/s)	6.49
5	Stack diameter (M)	0.15
6	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	282
7	Sample Condition When Received	Satisfactory
8	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
9	Serial No. of the Equipment	338 DTH 14
10	Calibration done on and due on	Due on 18.11.2025
11	Sampling and Analysis Method	IS 11255 & flue gas analyser

Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Standard
1	Particulate Matter	g/Kw-hr	0.080	<0.2
2	CO	g/Kw-hr	0.060	<3.5
3	Nox +HC	g/Kw-hr	0.131	<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

Stack Monitoring Report

Report No. N028024124

Name of the Client :	The Sandur Manganese & Iron Ores Limited
Name of the Mine :	RAMGAD MANGANESE & IRON ORE MINE (ML NO. 2679)
Location :	Mining Lease No. 2679
Stack ID & Capacity :	DG Set 20 KVA Ramgad Mines
Sample Collected by :	Environmental Laboratory (Unit of Mineral Engineering Services)
Date of Collection :	14.12.2024
Particulars of Sample Collected :	Emissions from stack collected through stack sample VSS1
Date of Sample Receipt :	15.12.2024
Lab Code :	N/24/12/4-0280
Issue date :	02.01.2025

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature (°C)	30
3	Stack Temperature (°C)	126
4	Velocity (m/s)	5.4
5	Stack diameter (M)	0.15
6	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	241
7	Sample Condition When Received	Satisfactory
8	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
9	Serial No. of the Equipment	338 DTH 14
10	Calibration done on and due on	Due on 18.11.2025
11	Sampling and Analysis Method	IS 11255 & flue gas analyser

Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Standard
1	Particulate Matter	g/Kw-hr	0.091	<0.2
2	CO	g/Kw-hr	0.076	<3.5
3	Nox +HC	g/Kw-hr	0.242	<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

Arushi Kousar
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Dy. T.M. - Chemical

Govt. Analyst / Authorised Signatory

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ENVIRONMENTAL LABORATORY

(UNIT OF MINERAL ENGINEERING SERVICES LLP)

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. 20

RESULTS OF RESIPARBLE AIR-BORNE DUST SURVEY

Name of the Owner : Sandur Manganese & Iron Ores Limited

Name of the Mine : Ramgad Manganese & Iron Ore Mine (ML NO. 2679)

Sample Collected by: Mr. K Mallikarjuna

Issue Date : 02.01.2025

PERSONAL SAMPLER

SL. NO	DATE OF SAMPLE COLLECTION	Filter paper code	Lab Code	LOCATION / CATEGORY	Name of the person	DURATION OF SAMPLING			Volume of air (Lts)	DUST CONCENTRATION mg/m ³	*PERMISSIBLE LIMIT mg/m ³
						FROM	TO	TOTAL HRS		RPM	
1	17.12.2024	603	FS/24/12/4-0001	Wheel Loader Operator	Kasim Saab	8:30	16:30	8:00	684.0	1.17	3
2	17.12.2024	604	FS/24/12/4-0002	Tipper Operator	Oblesh	8:40	16:40	8:00	1056.0	1.04	3

STATIC SAMPLER

SL. NO	DATE OF SAMPLE COLLECTION	Filter paper code	Lab Code	LOCATION / CATEGORY	Name of the person	DURATION OF SAMPLING			Volume of air (Lts)	DUST CONCENTRATION mg/m ³	*PERMISSIBLE LIMIT mg/m ³
						FROM	TO	TOTAL HRS		RPM	
3	17.12.2024	605	FS/24/12/4-0004	Drilling Point	Static	9:00	17:00	8:00	940.8	2.13	3
4	17.12.2024	606	FS/24/12/4-0003	Loading Point	Static	9:50	17:50	8:00	796.8	1.13	3

*Note: Free Silica Analysis report for Ragmad Manganese & Iron Ore mine show less than 5% Free silica content and hence the permissible limit for dust concentration shall be 3 mg/m³ (Ref : DGMS Reg 124(2) of MMR,1961)

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TEST REPORT

Table No. 21

Free Silica Analysis Report

Name of the Owner : Sandur Manganese & Iron Ores Limited					
Name of the Mine : Ramgad Manganese & Iron Ore Mine (ML NO. 2679)					
Sample Collected by : Mr. K Mallikarjuna					
Report No : ELMES192412					
Issue Date : 02.01.2025					
SL.NO	DATE OF SAMPLE COLLECTION	LOCATION / CATEGORY	Name of the person / Static	Free Silica Content (%)	Free Silica Limits (%)
<u>PERSONAL SAMPLER</u>					
1	17.12.2024	Wheel.Loader Operator	Kasim Saab	ND	5
2	17.12.2024	Tipper Operator	Oblesh	ND	5
<u>STATIC SAMPLER</u>					
3	17.12.2024	Drilling Point	Static	ND	5
4	17.12.2024	Loading Point	Static	ND	5
Note: ND-Not Detected, Detection Level : 0.0005%					


 ARSHIYA KOUSAR
 Dy. T.M. - Chemical

Govt. Analyst / Authorised Signatory

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