

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
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

Ref No: SMIORE/MINES/ENV/2024-25/2678/149

08 May 2024

To,
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 April 2024 in respect of Mining Lease No. 2678.

Ref: 1. Environmental Clearance F.No. IA-J-11015/45/2021-IA-II(M) dated 25 April 2023.
2. Consent for Operation No. AW-341719 dated 02 February 2024.

With reference to the letter cited above, we are enclosing herewith environmental monitoring reports prepared after monitoring the stipulated environmental parameters for the month of April 2024 in respect of Mining Lease No. 2678 of The Sandur Manganese & Iron Ores Limited.

Kindly acknowledge the receipt of the reports.

Thank you,

for The Sandur Manganese & Iron Ores Limited,

Md. Abdul Saleem,
Whole Time Director
& Company Secretary.



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

Tel: +91 8394 244450 / 244335



National Accreditation Board for
Testing and Calibration Laboratories

CERTIFICATE OF ACCREDITATION

**ENVIRONMENTAL LABORATORY (UNIT OF MINERAL
ENGINEERING SERVICES)**

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

**"General Requirements for the Competence of Testing &
Calibration Laboratories"**

for its facilities at

#948, 2ND CROSS, ST. THOMAS TOWN POST, KAMMANAHALLI MAIN ROAD, BENGALURU,
BENGALURU URBAN, KARNATAKA, INDIA

in the field of

TESTING

Certificate Number: TC-6172

Issue Date: 24/05/2023

Valid Until: 23/05/2025

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.

(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Name of Legal Identity : ENVIRONMENTAL LABORATORY (UNIT OF MINERAL ENGINEERING SERVICES)

Signed for and on behalf of NABL



N. Venkateswaran
Chief Executive Officer



Speed Post

केन्द्रीय प्रदूषण नियंत्रण बोर्ड
CENTRAL POLLUTION CONTROL BOARD
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय भारत सरकार
MINISTRY OF ENVIRONMENT FOREST & CLIMATE CHANGE GOVT OF INDIA

F.No. LB/99/7/2021-INST LAB-HO-CPCB-HO/Pvt./ (601)

Dated: 28th January 2023
07th June 2023

Recognition Certificate

To,

Head of Laboratory,
M/s Environmental Laboratory (Unit of Mineral Engineering Services),
#948, 2nd Cross, St. Thomas Town Post, Kammanahalli Road, Bengaluru--560084,
Karnataka.

Subject: Recognition of M/s Environmental Laboratory (Unit of Mineral Engineering Services), #948, 2nd Cross, St. Thomas Town Post, Kammanahalli Road, Bengaluru--560084, Karnataka, as Environmental laboratory under the Environmental (Protection) Act- 1986.

Sir,

I am directed to refer the online application, dated 27/10/2022 for the recognition of your laboratory under Environmental (Protection) Act, 1986. Based on the recommendations of the concerned Division, approval of Competent Authority for recognition of Environmental laboratories and your acceptance of the revised terms and conditions at Annexure-III & IV of the guidelines for recognition of environmental laboratories, CPCB approves the renewal of recognition M/s Environmental Laboratory (Unit of Mineral Engineering Services), #948, 2nd Cross, St. Thomas Town Post, Kammanahalli Road, Bengaluru--560084, Karnataka and shall be notified in the Gazette of India. Considering the current requirement of mandatory accreditation/ certifications of the laboratory, this recognition shall be valid up to 23/05/2025.

2. As sought in the aforementioned application, M/s Environmental Laboratory (Unit of Mineral Engineering Services), #948, 2nd Cross, St. Thomas Town Post, Kammanahalli Road, Bengaluru--560084, Karnataka may undertake the following tests:

- Physical Tests**-Conductivity, Colour, pH, Fixed & Volatile Solids, Total Solids, Total Dissolved Solids, Total Suspended Solids, Turbidity, Temperature, Velocity & Discharge Measurement of Industrial Effluent Stream, Flocculation Test (Jar test), Odour, Salinity, Settleable Solids and Sludge Volume Index.
- Inorganic (General and Non-metallic):** Acidity, Alkalinity, Ammonical Nitrogen, Chloride, Chlorine Residual, Dissolved Oxygen, Fluoride, Total Hardness, Total Kjeldahl Nitrogen (TKN), Nitrite Nitrogen, Nitrate Nitrogen, Phosphate, Sulphate, Silica, Cyanide and Sulphide.
- Inorganic (Trace Metals):** Boron, Cadmium, Calcium, Total Chromium, Chromium Hexavalent, Copper, Iron, Lead, Magnesium, Mercury, Nickel, Potassium, Sodium, Sodium Absorption Ratio, Zinc, Arsenic, Aluminium, Barium, Selenium, Tin, Antimony, Cobalt and Vanadium,
- Organics (General) and Trace Organics:** Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Oil and Grease, Phenolic Compounds, Pesticides (each) (Organo-Chlorine and Organo Nitrogen-Phosphorus), Surfactant, Tanin & Lignin, Poly-Chlorinated biphenyl (PCB's) each, Poly-Nuclear Aromatic Hydrocarbon (PAH).
- Microbiological Test:** Total Coliform, Faecal Coliform, *E. coli*, *Faecal Streptococci* and Total Plate Count.
- Toxicological Tests:** Bioassay Method for Evaluation of Toxicity using Fish and Measurement of Toxicity Using *Daphnia* or Other Organism.
- Biological Test:** Macrophytic Identification, Planktonic Identification Count and Chlorophyll.

'परिवेश भवन' पर्वी अर्जुन नगर, दिल्ली-110032

Contd.

Parivesh Bhawan, East Arjun Nagar, Delhi-110032

दूरभाष/Tel : 43102030, 22305792, वेबसाइट/Website : www.cpcb.nic.in

- viii. **Characterization of Hazardous Waste:** Corrosivity, Ignibility (Flash point) and Measurement of Heavy Metals/Pesticides in the Waste/Leachate.
- ix. **Soil/Sludge/Sediment and Solid Waste:** Boron, Cation Exchange Capacity (CEC), Electrical Conductivity, Nitrogen (Available), Organic Carbon/Matter (Chemical Method), pH, Phosphorous (Available), Phosphate (Ortho), Phosphate (Total), Potassium, SAR in Soil Extract, Sodium, Soil moisture, TKN, Calorific Value, Ammonia, Bicarbonate, Calcium, Calcium Carbonate, Chloride, Colour, H.Acid, Heavy Metal, Magnesium, Nitrate, Nitrite, PAH, Pesticide, Potash (Available), Sulphate, Sulphur, Total Organic Carbon, Total Water Soluble Salt and Water Holding Capacity.
- x. **Ambient Air/ Fugitive Emissions:** Nitrogen Dioxide (NO₂), Sulphur Dioxide (SO₂), Total Suspended Particulate Matter, Respirable Suspended Particulate Matter PM₁₀, Ammonia, Carbon Monoxide, Chlorine, Lead, Ozone, Benzene Toluene Xylene (BTX), Polycyclic Aromatic Hydrocarbon (PAH) Benzo-a-Pyrene & others and PM_{2.5}.
- xi. **Stack Gases/ Source Emission:** Particulate Matter, Sulphur Dioxide, Velocity & Flow, Carbon Dioxide, Carbon Monoxide, Temperature, Oxygen, Oxides of Nitrogen, Acid Mist, Ammonia, Total Hydrocarbon, Hydrogen Sulphide and Carbon Disulphide.
- xii. **Noise Level:** Noise Level Measurement (20-140 dBA) and Ambient Noise and Source Specific Noise.
- xiii. **Meteorological:** Ambient Temperature, Wind Direction, Wind Speed, Relative Humidity, Solar Radiation and Rainfall.

3. Further, the following analysts have been approved as Government Analysts.

- i. M. Sachin Raju
- ii. Binu Mani
- iii. Arshiya Kousar

- 4. The laboratory shall compulsorily participate in the Analytical Quality Exercise conducted by the Central Pollution Control Board (CPCB) to ascertain the capability of the laboratory and analysis carried out and shall submit quarterly progress report to CPCB.
- 5. The surprise inspection/periodic surveillance of the recognized environment laboratory will be undertaken by CPCB to assess its proper functioning systematic operation and reliability of data generated at the laboratory.
- 6. It is also mandatory for the laboratory to have requisite accreditations of the ISO: 17025 and ISO:45001 and its renewal as per accreditation rules. This recognition is subject to such accreditations and renewals as applicable. The laboratory is required to apply online for further renewal of recognition through CPCB web portal after renewal of the mandatory accreditations / certifications concerned.
- 7. The laboratory should compulsorily follow the accepted terms and conditions. In case of serious non-compliance of any of the terms and conditions, the laboratory may be black listed for a minimum period of two years and civil/criminal proceedings, as applicable, may be initiated for performing functions on behalf of the Government in an unauthorized manner.

Yours faithfully,

डॉ. के. रंगनाथन / Dr. K. Ranganathan
 वैज्ञानिक 'E' सरकारी विश्लेषक / Scientist 'E' Govt. Analyst
 केंद्रीय प्रदूषण नियंत्रण बोर्ड
 Central Pollution Control Board
 पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार
 (Mo Environment, Forest & Climate Change, Govt. of India)
 परियेश भवन, पूर्वी अर्जुन नगर, दिल्ली-110032
 Parivesh Bhawan, East Arjun Nagar, Delhi-110032

K. Ranganathan 7/6/23
 (Dr. K. Ranganathan)
 Scientist-E & Divisional Head
 Instrumentation laboratory

ENVIRONMENTAL MONITORING REPORT

April, 2024

Project : Mining Lease No. 2678
Deogiri Manganese & Iron Ore Mine,
Kammathuru Iron Ore Mine,
Subrayanahalli Manganese & Iron Ore Mine,
Sandur Taluk, Ballari Dist, Karnataka.

Lessee

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

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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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.1

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited Name of the Project : Mining Lease No. 2678 Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services) Station at & Code : A1, Mine Pit (SK) / (CBG) Duration : 24 Hrs Issue date : 02.05.2024 Reference IS 5182 & Lab SOP						
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
08.04.2024	N/24/04/2-0077	10	11	63	30	<0.2
10.04.2024	N/24/04/2-0166	13	16	58	28/	0.30
12.04.2024	N/24/04/2-0294	8	14	63	30	<0.2
13.04.2024	N/24/04/3-0001	12	17	55	28	0.23
17.04.2024	N/24/04/3-00183	8	15	56	24	0.30
18.04.2024	N/24/04/3-00195	10	11	45	22	<0.2
24.04.2024	N/24/04/4-0166	8	9	68	36	<0.2
25.04.2024	N/24/04/4-0172	9	12	58	30	<0.2
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

948, 2nd Cross, St. Thomas Town Post, Kammanahalli, Bangalore - 560 084.

Phone : 080-25432969 Tel/fax : 25432968. E-mail : mesbng@gmail.com, www.envtest.in



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

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. 2678						
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)						
Station at & Code : A2, Kammathuru (within ML Area)						
Duration : 24 Hrs						
Issue date : 02.05.2024						
Reference IS 5182 & Lab SOP						
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
08.04.2024	N/24/04/2-0078	7	14	46	28	<0.2
10.04.2024	N/24/04/2-0167	11	13	55	32	<0.2
17.04.2024	N/24/04/3-00184	12	14	40	26	<0.2
18.04.2024	N/24/04/3-00196	7	11	53	28	<0.2
24.04.2024	N/24/04/4-0167	8	9	44	29	<0.2
25.04.2024	N/24/04/4-0173	9	10	47	27	<0.2
29.04.2024	N/24/05/1-0016	7	11	48	22	0.20
30.04.2024	N/24/05/1-0022	6	14	51	28	0.20
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.3

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited Name of the Project : Mining Lease No. 2678 Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services) Station at & Code : A3, Deogiri (within ML Area) Duration : 24 Hrs Issue date : 02.05.2024 Reference IS 5182 & Lab SOP						
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
12.04.2024	N/24/04/2-0284	7	9	44	26	0.36
13.04.2024	N/24/04/3-0049	11	12	40	24	0.32
17.04.2024	N/24/04/3-00185	13	14	60	40	<0.2
18.04.2024	N/24/04/3-00197	13	17	54	30	0.20
24.04.2024	N/24/04/4-0168	10	13	40	24	0.20
25.04.2024	N/24/04/4-0174	9	16	50	22	0.28
29.04.2024	N/24/05/1-0004	11	12	51	26	0.22
30.04.2024	N/24/05/1-0030	9	11	40	22	0.36
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	2 8 Hr

Arshiyakousar
ARSHIYAKOUSAR
Dy. T.M. - Chemical

Govt. Analyst / Authorised Signatory

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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. 2678						
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)						
Station at & Code : A4, SBH Plot (Mine Boundary)						
Duration : 24 Hrs						
Issue date : 02.05.2024						
Reference IS 5182 & Lab SOP						
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
08.04.2024	N/24/04/2-0079	10	12	50	30	<0.2
10.04.2024	N/24/04/2-0168	9	10	43	28	<0.2
17.04.2024	N/24/04/3-00185	13	14	60	40	<0.2
18.04.2024	N/24/04/3-00197	13	17	54	30	0.20
24.04.2024	N/24/04/4-0168	10	13	40	24	0.20
25.04.2024	N/24/04/4-0174	9	16	50	22	0.28
29.04.2024	N/24/05/1-0017	12	13	48	20	0.31
30.04.2024	N/24/05/1-0023	9	13	56	32	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
ARSHIYA KOUSAR
Dy. T.M. - Chemical

Govt. Analyst / Authorised Signatory

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

TEST REPORT

Table No.5

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited						
Name of the Project : Mining Lease No. 2678						
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)						
Station at & Code : A5, Subbarayanahalli (within ML Area)						
Duration : 24 Hrs						
Issue date : 02.05.2024						
Reference IS 5182 & Lab SOP						
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
03.04.2024	N/24/04/1-0067	6	12	45	34	<0.2
04.04.2024	N/24/04/1-0110	8	10	55	33	<0.2
10.04.2024	N/24/04/2-0096	6	15	63	30	<0.2
11.04.2024	N/24/04/2-0183	9	10	53	31	<0.2
17.04.2024	N/24/04/3-00159	11	16	65	23	<0.2
18.04.2024	N/24/04/3-00209	12	16	50	25	<0.2
26.04.2024	N/24/04/5-0004	11	13	52	29	<0.2
27.04.2024	N/24/04/5-0055	9	14	46	23	<0.2
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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Dy. T.M. - Chemical

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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. 2678						
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)						
Station at & Code : A6, Appayyanahalli (Narayanpura)						
Duration : 24 Hrs						
Issue date : 02.05.2024						
Reference IS 5182 & Lab SOP						
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
01.04.2024	N/24/04/1-0014	11	15	36	24	0.25
02.04.2024	N/24/04/1-0039	14	16	39	22	0.24
10.04.2024	N/24/04/2-0109	11	14	54	26	<0.2
11.04.2024	N/24/04/2-0198	9	11	48	28	0.33
19.04.2024	N/24/04/3-00239	13	15	60	33	0.25
20.04.2024	N/24/04/4-0005	11	14	55	31	0.36
24.04.2024	N/24/04/4-0123	12	16	51	40	0.24
25.04.2024	N/24/04/4-0180	12	16	45	32	0.36
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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Recognised by MoEFCC(CPCB) under E(P) Act 1986 recognition valid upto 23.05.2025

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. 2678						
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)						
Station at & Code : A7, Vitalanagar (Navalatti)						
Duration : 24 Hrs						
Issue date : 02.05.2024						
Reference IS 5182 & Lab SOP						
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
05.04.2024	N/24/04/2-0064	12	13	49	27	0.22
06.04.2024	N/24/04/2-0074	8	14	46	25	0.23
12.04.2024	N/24/04/2-0295	14	16	52	28	0.24
13.04.2024	N/24/04/3-0002	9	12	39	25	0.34
19.04.2024	N/24/04/3-00274	7	14	48	25	0.38
20.04.2024	N/24/04/4-0001	12	13	53	32	0.21
26.04.2024	N/24/04/5-0030	7	13	50	25	0.31
27.04.2024	N/24/04/5-0041	11	16	57	29	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
ARSHIYA KOUSAR
Dy. T.M. - Chemical

Govt. Analyst / Authorised Signatory

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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. 2678						
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)						
Station at & Code : A8, Swamihalli						
Duration : 24 Hrs						
Issue date : 02.05.2024						
Reference IS 5182 & Lab SOP						
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
05.04.2024	N/24/04/2-0065	8	11	46	20	0.29
06.04.2024	N/24/04/2-0075	9	16	53	28	0.20
12.04.2024	N/24/04/2-0296	10	12	55	30	0.25
13.04.2024	N/24/04/3-0003	7	15	56	32	0.31
19.04.2024	N/24/04/3-00275	6	11	42	22	0.28
20.04.2024	N/24/04/4-0002	9	15	48	23	0.23
26.04.2024	N/24/04/5-0031	9	10	45	26	0.25
27.04.2024	N/24/04/5-0042	12	17	38	18	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.9

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited						
Name of the Project : Mining Lease No. 2678						
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)						
Station at & Code : A9, Yeswanthanagar						
Duration : 24 Hrs						
Issue date : 02.05.2024						
Reference IS 5182 & Lab SOP						
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
03.04.2024	N/24/04/1-0066	11	13	43	32	<0.2
04.04.2024	N/24/04/1-0109	14	18	59	33	0.23
10.04.2024	N/24/04/2-0095	8	10	57	30	0.31
11.04.2024	N/24/04/2-0182	11	16	54	29	0.40
17.04.2024	N/24/04/3-00158	12	14	50	26	0.28
18.04.2024	N/24/04/3-00208	10	12	53	35	0.33
26.04.2024	N/24/04/5-0003	11	15	48	27	0.28
27.04.2024	N/24/04/5-0054	10	16	51	28	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.10

AMBIENT AIR QUALITY

Name of the Client	: The Sandur Manganese & Iron Ores Limited					
Name of the Project	: Mining Lease No. 2678					
Sample Collected by	: Environmental Laboratory (Unit of Mineral Engineering Services)					
Station at & Code	: A10, Tonasigeri					
Duration	: 24 Hrs					
Issue date	: 02.05.2024					
Reference	IS 5182 & Lab SOP					
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
05.04.2024	N/24/04/2-0066	9	12	51	30	0.32
06.04.2024	N/24/04/2-0076	10	11	46	22	0.28
12.04.2024	N/24/04/2-0297	13	14	54	26	0.35
13.04.2024	N/24/04/3-0004	8	14	51	21	0.24
19.04.2024	N/24/04/3-00276	12	16	45	23	0.36
20.04.2024	N/24/04/4-0003	8	15	47	25	0.22
26.04.2024	N/24/04/5-0032	10	11	50	27	0.24
27.04.2024	N/24/04/5-0043	9	12	54	32	0.29
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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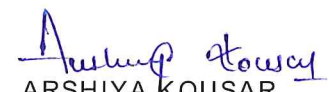
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TEST REPORT

Table No. 11

Fugitive Emission

Name of the Client : The Sandur Manganese & Iron Ores Limited Name of the Project : Deogiri Manganese & Iron Ore Mine (ML NO. 2678) Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services) Duration : 08 Hrs Issue Date : 02.05.2024			
Station at & Code	Date of sample	Lab Code	Particulate mater ($\mu\text{g}/\text{m}^3$)
FA1, Mine Face / Benches	24.04.2024	N/24/04/4-0169	245
FA2, Haulage Road / Service Road	24.04.2024	N/24/04/4-0170	552
FA3, Crushing & Screening Plant	25.04.2024	N/24/04/4-0175	495
FA4, Mineral Stock Yard / Loading	25.04.2024	N/24/04/4-0176	367
FA5, Active Waste Dump	25.04.2024	N/24/04/4-0177	475
Ref : Environmental (Protection) Rules, 2010 (Sixth Amendment) <div style="text-align: right;">Particulate mater ($\mu\text{g}/\text{m}^3$)</div> <div style="text-align: right;">Permissible limits for Fugitive Emissions 600 $\mu\text{g}/\text{m}^3$</div>			


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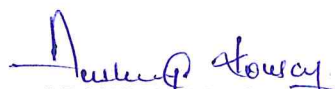
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TEST REPORT

Table No. 12

Fugitive Emission

Name of the Client : The Sandur Manganese & Iron Ores Limited Name of the Project : Kammathuru Iron Ore (KTIO) (ML No. 2678) Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services) Duration : 08 Hrs Issue Date : 02.05.2024			
Station at & Code	Date of sample	Lab Code	Particulate mater ($\mu\text{g}/\text{m}^3$)
FA1, Mine Face / Benches	17.04.2024	N/24/04/3-00186	290
FA2, Haulage Road / Service Road	17.04.2024	N/24/04/3-00187	358
FA3, Crushing & Screening Plant	17.04.2024	N/24/04/3-00188	451
FA4, Mineral Stock Yard / Loading	18.04.2024	N/24/04/3-00198	265
FA5, Active Waste Dump	18.04.2024	N/24/04/3-00199	382
Ref : Environmental (Protection) Rules, 2010 (Sixth Amendment) <div style="text-align: right;">Particulate mater ($\mu\text{g}/\text{m}^3$)</div> <div style="text-align: right;">Permissible limits for Fugitive Emissions 600 $\mu\text{g}/\text{m}^3$</div>			


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TEST REPORT

Table No. 13

Fugitive Emission

Name of the Client	: The Sandur Manganese & Iron Ores Limited		
Name of the Project	: Subrayanahalli Manganese & Iron Ore Mine (ML NO. 2678)		
Sample Collected by	: Environmental Laboratory (Unit of Mineral Engineering Services)		
Duration	: 08 Hrs.		
Issue Date	: 02.05.2024.		
Station at & Code	Date of sample	Lab Code	Particulate mater ($\mu\text{g}/\text{m}^3$)
FA1, Mine Face / Benches	29.04.2024	N/24/05/1-0018	365
FA2, Haulage Road / Service Road	29.04.2024	N/24/05/1-0019	290
FA3, Crushing & Screening Plant	29.04.2024	N/24/05/1-0020	258
FA4, Mineral Stock Yard / Loading	30.04.2024	N/24/05/1-0024	415
FA5, Active Waste Dump	30.04.2024	N/24/05/1-0025	358
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. 14

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. 2678
3	Month	01.04.2024 to 30.04.2024
4	Sample Type	Total Dust Fall Rate
5	Duration of Monitoring	One Month
6	Issue Date	02.05.2024

Result

Code	Location	Result	unit	Reference Method
DF1	Deogiri mines office	0.050	g/m ² month	IS 5182 (Part 01) : 2006
DF2	Kammathuru (Near School)	0.020	g/m ² month	IS 5182 (Part 01) : 2006
DF3	Appayyanahalli	0.013	g/m ² month	IS 5182 (Part 01) : 2006
DF4	Subbarayanahalli (Near Hospital)	0.020	g/m ² month	IS 5182 (Part 01) : 2006
DF5	Yeswanthanagar (Near Railway Track)	0.021	g/m ² month	IS 5182 (Part 01) : 2006

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TEST REPORT

Table No. 15

AMBIENT NOISE LEVEL DATA

Report No : M001240404

Client	: The Sandur Manganese & Iron Ores Limited						
Project	: Mining Lease No. 2678						
Sample Collected by	: Environmental Laboratory (Unit of Mineral Engineering Services)						
Date of monitoring	: 19.04.2024						
Issue Date	: 02.05.2024						
Code No.	Monitoring stations	Day			Night		
		L _{min}	L _{eq}	L _{max}	L _{min}	L _{eq}	L _{max}
Corezone							
N1	Mine Pit (SK/CBG)	42.0	51.3	56.0	34.0	43.4	47.0
N2	Kammathuru ML Area	37.0	51.7	58.0	34.5	43.6	48.0
N3	Deogiri ML Area	41.0	50.8	55.6	34.8	43.9	46.3
N4	SBS Plot (Mine Boundary)	38.0	50.9	59.0	33.4	42.6	48.0
N5	SB Halli ML Area	42.0	49.6	52.1	34.0	42.4	46.1
N6	Mine area	38.0	52.9	58.3	35.0	43.4	48.0
Bufferzone							
N7	Appayanahalli (Narayanapura)	36.0	50.2	57.3	33.6	43.3	47.0
N8	Vitthalanagar (Navalatti)	40.0	49.7	56.3	33.0	42.2	45.8
N9	Swamihalli	39.0	53.7	58.7	34.0	42.8	47.3
N10	Yeshwanthnagar	36.0	49.6	57.0	35.0	41.2	46.5
N11	Tonasingeri	36.0	50.5	57.0	35.6	41.5	44.0
N12	Kumaraswamy Temple	42.0	52.2	60.0	33.6	42.2	48.0
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. 16

Report No :ED008524043

Name of the Client	: The Sandur Manganese & Iron Ores Limited
Name of the Project	: Mining Lease No. 2678
Sample Collected by	: Environmental Laboratory (Unit of Mineral Engineering Services)
Particulars of sample collected	: STP1, Inlet Water sample from 100 KLD STP, Deogiri
Date of sample collection	: 19.04.2024
Lab Code	: ED/24/04/3-0085
Issue Date	: 04.05.2024
Ref: G S R 1265 (e) and Schedule VI (Rule 3A of EP rule 1986)	

Sl. No.	Sample Code	STP1	Method of Testing
	Parameters	Results	
1	pH	6.65	IS 3025 (P-11)2017
2	Biochemical Oxygen Demand BOD ₃ 27 ^o C, mg/l	60	IS 3025 (P-44) 1993 RA 2019
3	Total Suspended Solids, at 105 ^o C, mg/l	139	IS 3025 (P-16)1984 RA 2017
4	Fecal coliform, MPN/100ml	3.6	APHA-23 rd Edition

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TEST REPORT

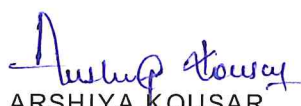
Table No. 17

Report No :ED008624043

Name of the Client	: The Sandur Manganese & Iron Ores Limited
Name of the Project	: Mining Lease No. 2678
Sample Collected by	: Environmental Laboratory (Unit of Mineral Engineering Services)
Particulars of sample collected	: STP2, Outlet Water sample from 100 KLD STP, Deogiri
Date of sample collection	: 19.04.2024
Lab Code	: ED/24/04/3-0086
Issue Date	: 04.05.2024
Ref: G S R 1265 (e) and Schedule VI (Rule 3A of EP rule 1986)	

Sl. No.	Sample Code	STP2	Sewage Effluent Discharge Standards	Method of Testing
	Parameters	Results		
1	pH	7.08	5.5to 9.0	IS 3025 (P-11)2017
2	Biochemical Oxygen Demand BOD ₃ 27 ^o C, mg/l	8	<30	IS 3025 (P-44) 1993 RA 2019
3	Total Suspended Solids, at 105 ^o C, mg/l	12	<50	IS 3025 (P-16)1984 RA 2017
4	Fecal coliform, MPN/100ml	1.8	<1000	APHA-23 rd Edition


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TEST REPORT

Table No. 18

Report No :ED008724043

Name of the Client	: The Sandur Manganese & Iron Ores Limited
Name of the Project	: Mining Lease No. 2678
Sample Collected by	: Environmental Laboratory (Unit of Mineral Engineering Services)
Particulars of sample collected	: ETP1, Inlet Water sample from 10 KLD ETP, Deogiri
Date of sample collection	: 19.04.2024
Lab Code	: ED/24/04/3-0087
Issue Date	: 04.05.2024
Ref: G S R 952 (e) and Schedule VI (Rule 3A of EP rule 1986)	

Sl. No.	Sample Code	ETP1	Method of Testing
	Parameters	Results	
1	pH	7.06	IS 3025 (P-11)2017
2	Chemical Oxygen Demand (COD)	218	IS 3025 (P-58) 2006 RA 2017
3	Total Suspended Solids, at 105°C, mg/l	918	IS 3025 (P-16)1984 RA 2017
4	Oil & Grease, mg/l	36	IS 3025 (Part-39)


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TEST REPORT

Table No. 19

Report No :ED008824043

Name of the Client	: The Sandur Manganese & Iron Ores Limited
Name of the Project	: Mining Lease No. 2678
Sample Collected by	: Environmental Laboratory (Unit of Mineral Engineering Services)
Particulars of sample collected	: ETP2, Outlet Water sample from 10 KLD ETP, Deogiri
Date of sample collection	: 19.04.2024
Lab Code	: ED/24/04/3-0088
Issue Date	: 04.05.2024
Ref: G S R 952 (e) and Schedule VI (Rule 3A of EP rule 1986)	

Sl. No.	Sample Code	ETP2	General Standards For Effluent Discharge of Environmental Pollutants	Method of Testing
	Parameters	Results		
1	pH	7.35	5.5 to 9.0	IS 3025 (P-11)2017
3	Chemical Oxygen Demand (COD)	31.8	<150	IS 3025 (P-58) 2006 RA 2017
3	Total Suspended Solids, at 105°C, mg/l	36	<50	IS 3025 (P-16)1984 RA 2017
4	Oil & Grease, mg/l	<1.0	<10	IS 3025 (Part-39)

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TEST REPORT

Table No. 20

Name of the Client		: The Sandur Manganese & Iron Ores Limited				
Name of the Project		: Mining Lease No. 2678				
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services)				
Particulars of sample collected		: SW1 - Durgammakolla spring water, SW2 - JLK spring water SW3 - Katrasinghkolla spring water				
Date of sample collection		: 19.04.2024				
Date of sample receipt		: 20.04.2024				
Issue Date		: 04.05.2024				
Ref:IS : 2296, 1982 Class C Norms (Stream Water Standards)						
Lab Code		ED/24/04/3-0089	ED/24/04/3-0090	ED/24/04/3-0091	Limits For Stream Water Standards	Method of Testing
Sl.No.	Parameters	Results				
		SW1	SW2	SW3		
1	pH	7.16	6.58	7.20	6.5 to 8.5	IS:3025(Part-11)2022
2	Colour (Hazen Units), Max	<1.0	<1.0	<1.0	300	IS:3025(Part-4)2021
3	Odour	Agreeable	Agreeable	Agreeable	-	IS:3025 (P-5) 2018
4	Total Dissolved Solids (mg/l), Max	370	182	138	1500	IS:3025(Part-16)2023
5	Total Suspended Solids, mg/l	16	<5.0	72	-	IS 3025 (P-17) 2022
6	Dissolved Oxygen (as O ₂), mg/l, Max	5.4	5.6	5.3	Min 4	IS:3025(Part-38)1989RA 2019
7	Biochemical Oxygen Demand (as O ₂), mg/l	<3	<3	<3	3	IS:3025(P-44) 2014
8	Oil & Grease, mg/l	<1.0	<1.0	<1.0	0.1	IS:3025(Part 39)2021
9	Total Hardness (as CaCO ₃),mg/l,Max	204	50	58	-	IS:3025 (P-21):2009 RA 2019
10	Sulphates as SO ₄ (mg/l), Max	2	1.8	5.2	400	IS:3025(P-24)Sec 1 2022
11	Phosphates (as P), mg/l	<0.05	<0.05	<0.05	-	IS 3025 (P-31) Sec 1 2022
12	Chloride (as Cl),mg/l, Max	47.3	47.79	53.71	600	IS:3025(Part-32) ;1988RA2019
13	Fluoride (as F),mg/l, Max	0.15	<0.1	<0.1	1.5	APHA 23rd Edition 4500F
14	Sulphide (as H ₂ S) , mg/l, Max	<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	-	IS:3025 (Part-57)2021
16	Iron (as Fe),mg/l, Max	0.045	0.016	0.153	50	IS:3025(P-2) 2019
17	Percent of Sodium (%)	23.73	57.35	48.85	-	IS 11624 .2009
18	Residual Sodium Carbonate (meq/l)	2.78	<0.5	<0.5	-	IS:2488 (P-5) 1976
19	Total Coliform, MPN/100ml	33	46	58	5000	IS:1622:1981

""END OF REPORT""

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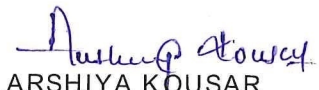
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TEST REPORT

Table No.21

Name of the Client		: The Sandur Manganese & Iron Ores Limited			
Name of the Project		: Mining Lease No. 2678			
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services)			
Particulars of sample collected		: SW4 - Hari Shankar Spring Water, SW5 - Narihalla Dam water			
Date of sample collection		: 19.04.2024			
Date of sample receipt		: 20.04.2024			
Issue Date		: 04.05.2024			
Ref:IS : 2296, 1982 Class C Norms (Stream Water Standards)					
Lab Code		ED/24/04/3-0092	ED/24/04/3-0093	Limits For Stream Water Standards	Method of Testing
Sl.No.	Parameters	Results			
		SW4	SW5		
1	pH	6.65	8.3	6.5 to 8.5	IS:3025(Part-11)2022
2	Colour (Hazen Units), Max	<1	5.00	300	IS:3025(Part-4)2021
3	Odour	Agreeable	Agreeable	-	IS:3025 (P-5) 2018
4	Total Dissolved Solids (mg/l), Max	72.0	680.0	1500	IS:3025(Part-16)2023
5	Total Suspended Solids, mg/l	8	56	-	IS 3025 (P-17) 2022
6	Dissolved Oxygen (as O ₂), mg/l, Max	5.20	5.40	Min 4	IS:3025(Part-38)1989RA 2019
7	Biochemical Oxygen Demand (as O ₂), mg/l	<3	<3	3	IS:3025(P-44) 2014
8	Oil & Grease, mg/l	<1.0	<1.0	0.1	IS:3025(Part 39)2021
9	Total Hardness (as CaCO ₃),mg/l,Max	18	248	-	IS:3025 (P-21):2009 RA 2019
10	Sulphates as SO ₄ (mg/l), Max	2.4	57.4	400	IS:3025(P-24)Sec 1 2022
11	Phosphates (as P), mg/l	<0.05	<0.05	-	IS 3025 (P-31) Sec 1 2022
12	Chloride (as Cl),mg/l, Max	22.66	179.36	600	IS:3025(Part-32) ;1988RA2019
13	Fluoride (as F),mg/l, Max	<0.1	<0.1	1.5	APHA 23rd Edition 4500F
14	Sulphide (as H ₂ S) , mg/l, Max	<0.01	<0.01	-	IS:3025 (P-29):1986 RA 2019
15	Boron (as B), mg/l, Max	<0.1	<0.1	-	IS:3025 (Part-57)2021
16	Iron (as Fe),mg/l, Max	0.046	0.133	50	IS:3025(P-2) 2019
17	Percent of Sodium (%)	54.74	54.28	-	IS 11624 .2009
18	Residual Sodium Carbonate (meq/l)	<0.5	2.06	-	IS:2488 (P-5) 1976
19	Total Coliform, MPN/100ml	49	94	5000	IS:1622:1981

""END OF REPORT""


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TEST REPORT

Table No. 22

Name of the Client		: The Sandur Manganese & Iron Ores Limited					
Name of the Project		: Mining Lease No. 2678					
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services)					
Particulars of sample collected		: GW1 - Deogiri Mine Office Bore water, GW2 - Kammaturu Bore water, GW3 - Appayyanahalli (Narayanpura) Bore water					
Date of sample collection		: 19.04.2024					
Issue Date		: 04.05.2024					
Ref : IS:10500-2012 Norms Amendment - 4 (Drinking Water Standards)							
Sl. No.	Lab Code	ED/24/04/3-0080	ED/24/04/3-0081	ED/24/04/3-0082	Desirable Limits	Permissible Limits	Method of Testing
	Sample Code Parameters	GW1	GW2	GW3			
1	Colour (Hazen Units)	<1.0	<1.0	<1.0	5	15	IS:3025 (P-4) 2021
2	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	IS:3025 (P-5) 2018
3	pH Value	6.52	6.85	7.15	6.5 to 8.5	6.5 - 8.5	IS:3025 (P-11) 2022
4	Turbidity, NTU, Max	0.1	<0.1	<0.1	1	5	IS:3025 (P-10) 1984 RA 2017
5	Electrical Conductivity (µmhos/cm)	126.2	1514.0	1691.0	—	—	IS 3025 (P-14)
6	Total Dissolved Solids, mg/l, Max	92.0	1050.0	1158.0	500	2000	IS:3025 (P-16) 1984 RA 2017
7	Aluminium (as Al), Max	0.016	0.062	0.037	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	8.06	125.04	92.18	75	200	IS:3025 (P-40) 1991 RA 2019
10	Copper (as Cu), mg/l, Max	0.008	0.088	0.01	0.05	1.5	IS:3025 (P-2) 2019
11	Chloride as Cl (mg/l), mg/l, Max	5.42	331.62	297.13	250	1000	IS:3025 (P-32) 1988 RA 2019
12	Fluoride (as F), mg/l, Max	0.16	1.31	0.63	1	1.5	IS:3025 (P-60) 2008 RA 2019
13	Iron (as Fe), mg/l, Max	0.031	0.075	0.046	1.0	1.0	IS:3025 (Part-2) 2019
14	Magnesium (as Mg), mg/l, Max	1.94	56.38	85.06	30	100	IS:3025 (P-46) 1994 RA 2019
15	Manganese (as Mn), mg/l, Max	0.002	0.09	0.003	0.1	0.3	IS:3025 (P-2) 2019
16	Nitrates (as NO ₃), mg/l, Max	2.52	8.54	7.60	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	1.00	144.40	65.20	200	400	IS:3025 (P-24) Sec 1 2022
19	Alkalinity (as CaCO ₃), mg/l, Max	34.65	351.4	455.4	200	600	IS:3025 (P-23) 1986 RA 2019
20	Total Hardness (as CaCO ₃), mg/l, Max	28.0	544.0	580.0	200	600	IS:3025 (P-21) 2009 RA 2019
21	Zinc (as Zn), mg/l, Max	0.013	0.182	0.023	5	15	IS:3025 (P-2) 2019
22	Sodium, (as Na), mg/l, Max	18	113	109	-	-	IS:3025 (Part-45) 1993 RA 2019
23	Potassium, (as K), mg/l, Max	<1.0	4.2	<1.0	-	-	IS:3025 (Part-45)
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. 23

Name of the Client		: The Sandur Manganese & Iron Ores Limited						
Name of the Project		: Mining Lease No. 2678						
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services)						
Particulars of sample collected		: GW4 - SB Halli Bore water (near hospital), GW5 - Yeshwanthnagar Bore water (near railway track)						
Date of sample collection		: 19.04.2024						
Issue Date		: 04.05.2024						
Ref : IS:10500-2012 Norms Amendment - 4 (Drinking Water Standards)								
Lab Code		ED/24/04/3-0083		ED/24/04/3-0084		Desirable Limits	Permissible Limits	Method of Testing
Sl. No.	Sample Code	GW4	GW5					
	Parameters	Results						
1	Colour (Hazen Units)	<1.0	<1.0	5	15	IS:3025 (P-4) 2021		
2	Odour	Agreeable	Agreeable	Agreeable	Agreeable	IS:3025 (P-5) 2018		
3	pH Value	7.14	7.07	6.5 to 8.5	6.5 - 8.5	IS:3025 (P-11) 2022		
4	Turbidity,NTU, Max	0.3	1.0	1	5	IS:3025 (P-10)1984 RA 2017		
5	Electrical Conductivity (µmhos/cm)	1874.0	2007.0	—	—	IS 3025 (P-14)		
6	Total Dissolved Solids,mg/l, Max	1280.0	1360.0	500	2000	IS:3025 (P-16)1984 RA2017		
7	Aluminium (as Al), Max	0.083	0.061	0.03	0.2	IS:3025 (P-2)2019		
8	Boron (as B), mg/l, Max	<0.1	<0.1	0.5	2.4	IS:3025 (Part-57)2021		
9	Calcium (as Ca),mg/l, Max	137.87	113.82	75	200	IS:3025 (P-40)1991 RA 2019		
10	Copper (as Cu),mg/l, Max	0.041	0.038	0.05	1.5	IS:3025 (P-2)2019		
11	Chloride as Cl (mg/l),mg/l, Max	366.11	484.37	250	1000	IS:3025 (P-32) 1988 RA 2019		
12	Fluoride (as F),mg/l, Max	0.66	0.50	1	1.5	IS:3025 (P-60) 2008 RA 2019		
13	Iron (as Fe),mg/l, Max	0.147	0.397	1.0	1.0	IS:3025 (Part-2) 2019		
14	Magnesium (as Mg)mg/l, Max	59.79	5687.00	30	100	IS:3025 (P-46)1994 RA 2019		
15	Manganese (as Mn),mg/l, Max	0.027	1.811	0.1	0.3	IS:3025 (P-2) 2019		
16	Nitrates (as NO ₃),mg/l, Max	7.88	0.12	45	45	IS:3025 (P-34)Sec 1 2023		
17	Selenium (as Se),mg/l	<0.005	<0.005	0.01	0.01	IS:3025(P-2) 2019		
18	Sulphates (as SO ₄),mg/l, Max	227.80	93.00	200	400	IS:3025 (P-24) Sec 1 2022		
19	Alkalinity (as CaCO ₃) mg/l, Max	475.2	351.5	200	600	IS:3025 (P-23):1986 RA 2019		
20	Total Hardness (as CaCO ₃),mg/l,Max	590.0	518.0	200	600	IS:3025 (P-21):2009 RA 2019		
21	Zinc (as Zn),mg/l, Max	0.16	0.061	5	15	IS:3025 (P-2) 2019		
22	Sodium, (as Na), mg/l, Max	115	187	--	--	IS:3025 (Part-45) 1993 RA2019		
23	Potassium, (as K), mg/l, Max	<1.0	5	--	--	IS:3025 (Part-45)		
24	Cadmium (as Cd),mg/l, Max	<0.001	<0.001	0.003	0.003	IS:3025 (P-2) 2019		
25	Cyanide (as CN),mg/l, Max	<0.01	<0.01	0.05	0.05	IS:3025 (P-27)Sec 1 2021		
26	Lead (as Pb),mg/l, Max	<0.005	<0.005	0.01	0.01	IS:3025 (P-2) 2019		
27	Mercury (as Hg),mg/l, Max	<0.0005	<0.0005	0.001	0.001	USPEA 200.7 Rev 4.4		
28	Arsenic (as As),mg/l, Max	<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	0.05	0.05	IS:3025 (P-52) 2014		
30	Escherichia coli/100ml	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			IS:15185:2016 RA 2021		

"END OF REPORT"


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TEST REPORT

Table No. 24

Name of the Client		: The Sandur Manganese & Iron Ores Limited					
Name of the Project		: Mining Lease No. 2678					
Particulars of sample		: Soil Samples					
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services)					
Date of sample collection		: 19.04.2024					
Issue Date		: 04.05.2024					
Lab Code			ED/24/04/3-0094	ED/24/04/3-0095	ED/24/04/3-0096	ED/24/04/3-0097	ED/24/04/3-0098
SL. No.	Sample Code		S1	S2	S3	S4	S5
	PARAMETERS	Unit	Results				
PHYSICAL PROPERTIES							
1	Colour	--	Red Soil	Red Soil	Red Soil	Red Soil	Red Soil
2	Textural class	--	Clay Loam	Sandy Loam	Clay Loam	Clay Loam	Clay Loam
3	Size Distribution						
	Sand	%	35.6	40.36	30.64	33.48	38.62
	Clay	%	34.88	33.51	22.48	42.16	36.55
	Silt	%	28.77	28.22	46.90	24.33	24.33
4	Moisture Content	%	6.68	5.84	6.3	5.8	6.1
5	Bulk Density	gm/cc	1.82	1.72	1.88	1.93	1.88
6	Water holding capacity	%	34.22	31.24	24.63	27.29	29.63
7	pH	--	6.68	6.41	7.52	7.38	6.48
8	EC	m.mohs/cm	0.188	0.258	0.229	0.248	0.152
Chemical Properties							
9	Organic Carbon	%	0.47	0.37	0.19	1.99	2.11
10	Nitrogen as N	Kg/Ha	116	250	120	130	216
11	Phosphorous as P	Kg/Ha	8.33	9.33	6.91	7.26	7.39
12	Potassium as K ₂ O	Kg/Ha	82	128	105	125	140
13	Sodium as Na	mg/kg	36	23	56	38	45
14	Chloride as Cl	mg/kg	120	108	128	144	318
15	Sulphate as SO ₄	mg/kg	45	14	32	15	105
Sample Locations :							
S1 - Top soil (Kammathuru)							
S2 - Top soil (Deogiri)							
S3 - Top soil (SB Halli)							
S4 - Active Dump 1							
S5 - Active Dump 2							

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TEST REPORT

Table No. 25

Table No. 20

Name of the Client	: The Sandur Manganese & Iron Ores Limited						
Name of the Project	: Mining Lease No. 2678						
Particulars of sample	: Soil Samples						
Sample Collected by	: Environmental Laboratory (Unit of Mineral Engineering Services)						
Date of sample collection	: 19.04.2024						
Issue Date	: 04.05.2024						
Lab Code			ED/24/04/3-0099	ED/24/04/3-0100	ED/24/04/3-0101	ED/24/04/3-0102	ED/24/04/3-0103
SL. No.	Sample Code		S6	S7	S8	S9	S10
	PARAMETERS	Unit	Results				
PHYSICAL PROPERTIES							
1	Colour	--	Red Soil	Red Soil	Red Soil	Red Soil	Red soil
2	Textural class	--	Clay Loam	Clay Loam	Slity Clay	Slity Clay	Clay Loam
3	Size Distribution						
	Sand	%	35.6	36.8	40.32	36.24	40.60
	Clay	%	28.74	28.74	31.54	30.90	20.78
	Silt	%	34.4	34.4	32.52	36.68	32.23
4	Moisture Content	%	6.68	6.68	7.24	4.98	4.26
5	Bulk Density	gm/cc	1.72	1.72	1.86	1.9	1.46
6	Water holding capacity	%	36	36	32	34	38
7	pH	--	7.5	7.5	7.4	7.64	7.62
8	EC	m.mohs/cm	0.442	0.442	0.425	0.344	0.584
Chemical Properties							
9	Organic Carbon	%	0.60	0.60	0.50	0.48	0.44
10	Nitrogen as N	Kg/Ha	130	130	128	140	130
11	Phosphorous as P	Kg/Ha	36	36	48	46	46
12	Potassium as K ₂ O	Kg/Ha	142	142	144	150	132
13	Sodium as Na	mg/kg	50	50	42	44	40
14	Chloride as Cl	mg/kg	32	32	34	40	36
15	Sulphate as SO ₄	mg/kg	28	28	30	34	38
Sample Locations :							
S6 - Appayyanahalli agriculture lan							
S7 - Vitthalanagar agriculture land							
S8 - Swamihalli agriculture land							
S9 -Tonasigere agriculture land							
S10 - Yeshwanthnagar agriculture land							

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TEST REPORT

Table No. 26

Stack Monitoring Report

Report No. M00124045

Name of the Client :	The Sandur Manganese & Iron Ores Limited
Name of the Mine :	Deogiri Manganese & Iron Ore Mine (ML NO. 2678)
Location :	Katasinkolla
Stack ID & Capacity :	DG Set 62.5 KVA
Sample Collected by :	Environmental Laboratory (Unit of Mineral Engineering Services)
Date of Collection :	26.04.2024
Particulars of Sample Collected :	Emissions from stack collected through stack sample VSS1
Date of Sample Receipt :	27.04.2024
Issue date :	06.05.2024

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature ($^{\circ}\text{C}$)	35
3	Stack Temperature ($^{\circ}\text{C}$)	144
4	Velocity (m/s)	6.8
5	Stack diameter (M)	0.15
6	Quantity of flue Gas Discharged into atmosphere (Nm^3/hr)	297
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	Done on 19.11.2022 and Due on 18.11.2024
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	0.148	<0.2
2	CO	g/Kw-hr	0.09	<3.5
3	Nox +HC	g/Kw-hr	0.72	<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. 27

Stack Monitoring Report

Report No. M00224045

Name of the Client :	The Sandur Manganese & Iron Ores Limited
Name of the Mine :	Subrayanahallul Manganese & Iron Ore Mine (ML NO. 2678)
Location :	KVH Iron Ore Mine
Stack ID & Capacity :	DG Set 6.0 KVA Doosan Light Source
Sample Collected by :	Environmental Laboratory (Unit of Mineral Engineering Services)
Date of Collection :	26.04.2024
Particulars of Sample Collected :	Emissions from stack collected through stack sample VSS1
Date of Sample Receipt :	27.04.2024
Issue date :	06.05.2024

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature (°C)	35
3	Stack Temperature (°C)	132
4	Velocity (m/s)	5.4
5	Stack diameter (M)	0.15
6	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	242
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	Done on 19.11.2022 and Due on 18.11.2024
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	0.101	<0.2
2	CO	g/Kw-hr	0.10	<3.5
3	Nox +HC	g/Kw-hr	0.66	<4.0

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TEST REPORT

Table No. 28

Stack Monitoring Report

Report No. M00324045

Name of the Client :	The Sandur Manganese & Iron Ores Limited
Name of the Mine :	Deogiri Manganese & Iron Ore Mine (ML NO. 2678)
Location :	KTION Work Shop
Stack ID & Capacity :	DG Set 6.0 KVA Doosan Light Source
Sample Collected by :	Environmental Laboratory (Unit of Mineral Engineering Services)
Date of Collection :	26.04.2024
Particulars of Sample Collected :	Emissions from stack collected through stack sample VSS1
Date of Sample Receipt :	27.04.2024
Issue date :	06.05.2024

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature (°C)	35
3	Stack Temperature (°C)	128
4	Velocity (m/s)	2.5
5	Stack diameter (M)	0.15
6	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	114
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	Done on 19.11.2022 and Due on 18.11.2024
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	0.118	<0.2
2	CO	g/Kw-hr	0.05	<3.5
3	Nox +HC	g/Kw-hr	0.35	<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. 29

Stack Monitoring Report

Report No. M00424045

Name of the Client :	The Sandur Manganese & Iron Ores Limited
Name of the Mine :	Kammathuru Iron Ore (KTIO) (ML No. 2678)
Location :	KTIO Sub Station
Stack ID & Capacity :	DG Set 125 KVA
Sample Collected by :	Environmental Laboratory (Unit of Mineral Engineering Services)
Date of Collection :	27.04.2024
Particulars of Sample Collected :	Emissions from stack collected through stack sample VSS1
Date of Sample Receipt :	29.04.2024
Issue date :	06.05.2024

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature (°C)	35
3	Stack Temperature (°C)	133
4	Velocity (m/s)	13.2
5	Stack diameter (M)	0.15
6	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	594
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	Done on 19.11.2022 and Due on 18.11.2024
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	0.059	<0.2
2	CO	g/Kw-hr	0.02	<3.5
3	Nox +HC	g/Kw-hr	0.15	<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. 30

Stack Monitoring Report

Report No. M00524045

Name of the Client :	The Sandur Manganese & Iron Ores Limited
Name of the Mine :	Kammathuru Iron Ore (KTIO) (ML No. 2678)
Location :	KTIO Sub Station
Stack ID & Capacity :	DG Set 82.5 KVA
Sample Collected by :	Environmental Laboratory (Unit of Mineral Engineering Services)
Date of Collection :	27.04.2024
Particulars of Sample Collected :	Emissions from stack collected through stack sample VSS1
Date of Sample Receipt :	29.04.2024
Issue date :	06.05.2024

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature (°C)	35
3	Stack Temperature (°C)	105
4	Velocity (m/s)	8
5	Stack diameter (M)	0.15
6	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	386
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	Done on 19.11.2022 and Due on 18.11.2024
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	0.140	<0.2
2	CO	g/Kw-hr	0.13	<3.5
3	Nox +HC	g/Kw-hr	0.28	<4.0

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TEST REPORT

Table No. 31

Stack Monitoring Report

Report No. M00624045

Name of the Client :	The Sandur Manganese & Iron Ores Limited
Name of the Mine :	Kammathuru Iron Ore (KTIO) (ML No. 2678)
Location :	KTIO - D-09 Dump
Stack ID & Capacity :	DG Set 7.5 KVA
Sample Collected by :	Environmental Laboratory (Unit of Mineral Engineering Services)
Date of Collection :	27.04.2024
Particulars of Sample Collected :	Emissions from stack collected through stack sample VSS1
Date of Sample Receipt :	29.04.2024
Issue date :	06.05.2024

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature (°C)	35
3	Stack Temperature (°C)	144
4	Velocity (m/s)	2.7
5	Stack diameter (M)	0.15
6	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	119
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	Done on 19.11.2022 and Due on 18.11.2024
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	0.119	<0.2
2	CO	g/Kw-hr	0.04	<3.5
3	Nox +HC	g/Kw-hr	0.28	<4.0

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TEST REPORT

Table No. 32

Stack Monitoring Report

Report No. M00624045

Name of the Client :	The Sandur Manganese & Iron Ores Limited
Name of the Mine :	Subrayanahalli Manganese & Iron Ore Mine (ML NO. 2678)
Location :	KVH Iron Ore Mines
Stack ID & Capacity :	DG 1010 KVA (808 KW)
Sample Collected by :	Environmental Laboratory (Unit of Mineral Engineering Services)
Date of Collection :	26.04.2024
Particulars of Sample Collected :	Emissions from stack collected through stack sample VSS1
Date of Sample Receipt :	27.04.2024
Issue date :	06.05.2024

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature (°C)	35
3	Stack Temperature (°C)	175
4	Velocity (m/s)	14.9
5	Stack diameter (M)	0.30
6	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	3352.2
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	Done on 19.11.2022 and Due on 18.11.2024
11	Sampling and Analysis Method	IS 11255 & flue gas analyser

Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Standard
1	NO _x (as NO ₂) (as 15% O ₂), dry basis	ppmv	40	360
2	NMHC (as C) (at 15 % O ₂)	mg/Nm ³	41.5	100
3	PM (as C) (at 15 % O ₂)	mg/Nm ³	45.00	75
4	CO (at 15 % O ₂)	(mg/Nm ³)	88.5	150

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TEST REPORT

Table No. 33

Stack Monitoring Report

Report No. M00824045

Name of the Client :	The Sandur Manganese & Iron Ores Limited
Name of the Mine :	Kammathuru Iron Ore (KTIO) (ML No. 2678)
Location :	KTIO - Work Shop
Stack ID & Capacity :	DG 6 KVA Doosan Light Source
Sample Collected by :	Environmental Laboratory (Unit of Mineral Engineering Services)
Date of Collection :	27.04.2024
Particulars of Sample Collected :	Emissions from stack collected through stack sample VSS1
Date of Sample Receipt :	29.04.2024
Issue date :	06.05.2024

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature (°C)	35
3	Stack Temperature (°C)	126
4	Velocity (m/s)	2.8
5	Stack diameter (M)	0.15
6	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	130
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	Done on 19.11.2022 and Due on 18.11.2024
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	0.108	<0.2
2	CO	g/Kw-hr	0.05	<3.5
3	Nox +HC	g/Kw-hr	0.73	<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. 34

Stack Monitoring Report

Report No. M00924045

Name of the Client :	The Sandur Manganese & Iron Ores Limited
Name of the Mine :	Kammathuru Iron Ore (KTIO) (ML No. 2678)
Location :	KTIO - Work Shop
Stack ID & Capacity :	DG 6 KVA Doosan Light Source
Sample Collected by :	Environmental Laboratory (Unit of Mineral Engineering Services)
Date of Collection :	27.04.2024
Particulars of Sample Collected :	Emissions from stack collected through stack sample VSS1
Date of Sample Receipt :	29.04.2024
Issue date :	06.05.2024

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature (°C)	35
3	Stack Temperature (°C)	118
4	Velocity (m/s)	2.3
5	Stack diameter (M)	0.15
6	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	106
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	Done on 19.11.2022 and Due on 18.11.2024
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	0.110	<0.2
2	CO	g/Kw-hr	0.04	<3.5
3	Nox +HC	g/Kw-hr	0.66	<4.0

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