Your (Half Yearly Compliance Report) has been Submitted with following details	
Proposal No	110015/88/2006-IA.II(M)
Compliance ID	72678787
Compliance Number(For Tracking)	EC/M/COMPLIANCE/72678787/2025
Reporting Year	2024
Reporting Period	01 Dec(01 Apr - 30 Sep)
Submission Date	19-01-2025
RO/SRO Name	V Geroge Jenner
RO/SRO Email	tr025@ifs.nic.in
State	KARNATAKA
RO/SRO Office Address	Integrated Regional Offices, Bengaluru
Note:- SMS and E-Mail has been sent to V Geroge Jenner, KARNATAKA with Notification to Project Proponent.	

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

No: SMIORE/MN/241120/ 1074

20 November 2024

To
Integrated Regional Office (IRO),
Ministry of Environment, Forests and Climate Change,
EC Division
Kendriya Sadan, 4th Floor, E & F Wing,
17th Main Road, II Block, Koramangala,
Bengaluru - 560034.

Dear Sir,

Sub: Submission of six-monthly compliance status report for EC Id No. 110015/88/2006-IA. II (M) dated 24 January 2007 in respect of ML. No. 2679 for the period 01 April 2024 to 30 September 2024.

Ref: Environmental Clearence vide No.110015/88/2006-IA. II (M) dated 24 January 2007.

As per specific conditions A(ii) of the above-mentioned Environmental Clearance (EC), we hereby submit the six-monthly compliance status report for the period from 01 April 2024 to 30 September 2024 regarding Mining Lease No.2679 of The Sandur Manganese & Iron Ores Limited.

We would like to submit that the online uploading of compliance on Parivesh Portal-2 has not happened as we are facing an issue with Verification of E-KYC documentation. Upon the escalation of this to the Ministry, the root cause of the non-verification of E-KYC has been found to be non-fetching of the information of Company's PAN from the NSDL Data Base. We have initiated the steps with concerned Department to facilitate this integration of Company's PAN to NSDL Data base. As this will take some time, we are submitting the six-monthly compliance report through E-mail to the registered mail id.

We request your good self to kindly acknowledge receipt of the same.

Thank you,

for The Sandur Manganese & Iron Ores Limited.,

Krishna Reddy
Vice President Mines

Six Monthly Compliance Report to the Conditions Stipulated in the Environmental Clearance Accorded by Ministry of Environment, Forests and Climate Change (MoEF&CC) for Period 01 April 2024 to 30 September 2024.

EC Id. No. 110015/88/2006-IA. II (M) dated 24 January 2007
for Mining Lease No 2679 of The Sandur Manganese & Iron Ores Limited.

Sl.No	Specific Condition	A: Specific Condition Compliance Notes
1	Top Soil shall be stacked properly with proper slope with adequate safeguards and shall be backfilled for reclamation and rehabilitation of mined out area.	Presently, Topsoil has been stacked at Neerlabbi Mine Pit. Earthen bund has been provided at the toe of the Top Soil Stack, The stacked top soil is being used for spread on dump slopes for afforestation and also in the backfilled terrace slopes for afforestation.
2	Overburden shall be stacked of earmarked dump sites) only and shall not be kept active for a long period. The maximum height of the dump shall not exceed 20m, each stage and shall preferably be 10m and overall dump slope shall not exceed 28. The Mine pit area shall be reclaimed by backfilling the OB in Phased manner. The OB dumps shall be scientifically vegetated with suitable native species to prevent erosion and surface runoff. Monitoring and Management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment and Forests.	Overburden dumps are stacked asper the approved Production and Development Plan by the IBM. Height and width of dumps of are maintained as per the Approved Dump Management Plan prescribed by the ICFRE which has been approved by Hon'ble Supreme Court appointed Central Empowered Committee. Total of 42.40 Ha of the lease area has been covered under dumps out of which 32.92 Ha has been fully reclaimed and rehabilitated using native species, grasses, herbs, shrubs. 2,71,648 saplings of all variety has been planted on these dumps. Bio-Engineering measures as prescribed in the R&R Plan has been undertaken. Progressive backfilling of the mined out exhausted portions of the mine pits has been undertaken and 6.55 hectares of mine pits has been covered by backfilling. Toe wall/Retaining wall of 2499 meters has been constructed below the dumps.
3	Garland drains shall be constructed to arrest silt and sediment flows from Soil and Mineral dumps. The Water so collected shall be utilised for watering in the mine area, roads, green belt development etc. The drain shall be regularly de-silted particularly after monsoon and maintained properly. Garland drain shall be constructed for both mine pits and waste dump and sump capacity designed keeping 50% safety margin over an above the peak sudden rainfall of last 50 years data and maximum discharge in the area adjoining the mine site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of garland drain and de-silted at regular intervals.	Garland drains has been constructed along haul roads, toe of waste dumps. 3546 meters of garland drain has been constructed within the mine lease area. The water from the garland drain are channelised through Gulley Plugs, loose boulder check dams to the Silt Settling pond and Rain Water harvesting Pits. The Design parameters of the garland drain, silt settling tanks, rainwater harvesting pits are as per the engineering design prescribed by the Domain experts of ICFRE during the R&R Plan preparation. Desilting of the Garland drain is being made post monsoon.

SANDUR MANGANESE & IRON ORES LTD. SANDUR

4	The project authorities shall obtain Forest Clearance under the provision of Forest Conservation Act of 1980 for diversion of Forest Land	Forest Clearance has been obtained from MOEFCC vide letter No F.No 8-17/94-FC dated 12 March 2007 over an extent of 142.58 Ha.
5	Plantation shall be raised including green belt of adequate width by planting the native species around the ML area, roads, OB Dump sites in consultation with local DFO/Agriculture Department. The Density of trees shall be around 2000 plants per hectare.	SMIORE is developing and maintaining own nursery with capacity of 1.00 lakh saplings per annum. 25-30 native species are being raised annually in the nursery and also procurement of saplings in being done from the Forest Nursery also in consultation with local RFO. Safety Zone (7.5m) along the mine lease boundary has been developed and maintained over an extent of 11.97 Ha and dump plantation covering 32.92 Ha has been carried out, Avenue Plantation on haul roads also has been carried out. 1.484 Ha of Mined out pits has been planted with native species. On Dumps 2.71 lakh saplings under green belt safety zone 43215 saplings, 4918 saplings under avenue plantation has been made which includes Herbs/Shrubs/native species. Density is more than the prescribed density of 2000 plants.
6	Wet Drilling should be adopted	Wet Drilling has been adopted
7	The project authority shall implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground water Board.	7 number of Rainwater harvesting pits has been constructed based on the catchment to augment the surface runoff rain water and facilitate recharge to ground water. Combined detailed Hydrogeological Studies in the Mining Lease No 2678 and 2679 has been carried out by Mr.M.C.Reddy, Former Regional Director CGWB and Ministry of Jalshakti accredited Consultant for Hydrogeology Projects in Mining where in it is estimated that based on the GEC Norms from the rain water harvesting pits is 7350 m^3.
8	Regular monitoring of ground water level and quality shall be carried out by establishing network of existing wells and constructing new piezometers during the mining operations. The Monitoring shall be carried out Four times in a year, Pre Monsoon (April-May), Monsoon (August), Post Monsoon (November) and Winter (January) and data thus collected may be sent regularly to MOEF, CGWA and Regional Director CGWB.	At Mining Lease No 2679, there is one Piezometers which are maintained at Central Deposit. Recently the piezometer has been fitted with Digital Water Level Recorder with telemetry facility to monitor the ground water fluctuation. Regular monitoring of the ground water levels is carried out once in every quarter and water quality is tested once in a year (post monsoon) and the reports are submitted to Karnataka Ground Water Authority and KSPCB.
9	Prior permission from the competent authority shall be obtained for drawal of groundwater if any.	NoC has been obtained from Karnataka Ground Water Authority on 16.02.2024 Vide no KG No: KGWAN1554866756) for abstraction of ground water of 5498 m3/day.

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10	Vehicular emissions shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of minerals. The vehicles shall be covered with tarpaulin and shall not be overloaded.	PUC certificates of HEMM/Tippers used in the mine are monitored and records are maintained. Preventive Maintenance of Machinery/Tippers are being carried out by the contractors. The Ore transportation trucks/tippers are covered with tarpaulins and are not overloaded.
11	Sewage treatment plant shall be installed for the colony. ETP shall also be provided for workshop and waste water generated from mining operation.	As there is no colony/township existing in the lease area, STP has not been provided. The generated Domestic waste water of 4.8 KL/day from toilets in scattered mine pits are being treated in Soak pits followed by septic tanks. As the mining machinery are contractual the maintenance of such HEMM/Tippers are carried out by contractors either at OEM Facility/Garage at Sandur and hence ETP within the mine lease area has not been provided with.
12	A final mine closure plan along with details of Corpus fund shall be submitted to the MOEF 5 years in advance for Final Mine closure for approval	As per the amended rules No 24 and 25 of MCDR 2017, The Final mine closure plan has to be submitted two years prior to expiry of the mine lease, thus the Final Mine Closure for the said mining please will be prepared in October 2030 upon which the duly approved copy of the same will be submitted to IRO of MOEFCC.

B. General Conditions:		
Sl. No.	**Conditions**	**Status of Compliance**
1	No change in mining technology and scope of working shall be made without prior approval of Ministry of Environment & Forests.	There is no change in Mining Technology. Open cast method of mechanized mining followed by manual sorting of manganese Ore is undertaken in the mine lease. Prior approval will be obtained if any change in technology is envisaged in future.
2	No change in the calendar plan including excavation, quantum of mineral and waste shall be made.	Production from the mine lease has been restricted to 32,000 tonnes of Manganese Production as per the Maximum Permissible Annual Production by the CEC accordingly the CFO and approved Mining plan also has been approved for the same production. The quantities are well within the approved Production and Development Plan duly approved for the Financial Year by the IBM.
3	Conservation measures for protection of flora and fauna in the core & buffer zone shall be drawn up in consultation with the local forest and wildlife department.	SMIORE has developed and is maintaining its own centralized nursery to cater to needs of afforestation. The species prescribed in the R&R Plan by ICFRE are being raised at the Nursery and Fruit bearing species are given more importance. Procurement of Saplings from the local forest nursery is also made as per guidance from local Range Forest Office.
4	Four ambient air quality monitoring stations shall be	Six Ambient Air Quality Stations in Core Zone

SANDUR MANGANESE & IRON ORES LTD. SANDUR

B. General Conditions:		
	established in the core zone as well as in the buffer zone for RPM, SPM, SO_2, NO_x monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the SPCB.	and Buffer Zone Viz Mine Area, Ramghad, Dharmapura, Garaga, Yeshvantnagar, Subbarayanhalli are being monitored weekly twice on every month basis as per the NAAQ Stnadards-2009 and reports are being submitted to KSPCB on quarterly basis. The Locations of these monitoring stations are as per the approved EIA/EMP studies which has been undertaken surrounding 10 km of the mine lease area.
5	Data on ambient air quality (RPM, SPM SO_2, NO_x) should be regularly submitted to the Ministry including its Regional Office located at Bangalore and the State Pollution Control Board/ Central Pollution Control Board once in six months.	Complied with. Regular submission of AAQ data is made on quarterly basis to Regional Office at KSPCB Bengaluru and to the SPCB at Ballari.
6	Fugitive dust emissions from all the sources shall be controlled regularly. Water spraying arrangements on haul roads, loading and unloading and at transfer points shall be provided and properly maintained.	Fugitive emissions from the point sources are controlled regularly. Three Water tankers are engaged for dust suppression at mines, Static Sprinklers has been installed on some portion of haul roads and at the loading points, Closure of loaded trucks with tarpaulins is mandatory before leaving the mine lease.
7	Measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in the operation of HEMM etc. shall be provided with ear plugs/muffs.	Some of the measures undertaken for reducing the noise are as follows 1) Controlled Blasting Techniques using NONEL are put to use, 2) Diesel Generation put in operation are provided with acoustic enclosures 3) AC cabins have been provided for operators of Excavators/Tippers thereby minimizing the exposure to noise levels. 4) Ear Plugs are provided to workers exposed at the mobile screening plant.
8	Industrial wastewater (workshop and the wastewater from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated: 19thMay 1993 and 31stDecember 1993 or as amended from time to time. Oil and grease trap shall be installed before discharge of workshop effluents.	The mining machinery engaged in the mine lease area from Contractual sources, the maintenance and repairs are being carried out by Contractor with at the OEM/Garages at Sandur. There is no workshop which is maintained in the mining lease area. For collection of used Oil from DG Sets/Light Motor Vehicles Oiled and grease traps (trays) has been provided in the Hazardous Waste Room.
9	Personnel working in the dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects.	Initial trainings and refresher trainings are conducted regularly to workers engaged and briefings are made on Health and Safety aspects. Personnel working at the mine are being provided

SANDUR MANGANESE & IRON ORES LTD. ★ SANDUR

B. General Conditions:		
		with all the personal protective equipment's including the dust mask which is been strictly supervised by the Asst. Mine Manager and Mine Foremen.
10	Occupational health surveillance program of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures.	Initial and Periodic Medical Examination is carried out as per The Mines Rules 1955 by SMIORE at Arogya Community Health Center which has been recognized by DGMS for OHS Facility along with qualified OHS Doctors.
11	A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the Organization.	The Sandur Manganese & Iron Ores Limited is ISO 14001:2015 certified under Environment Management system. Company has well laid down Environmental Policy duly approved by the Managing Director of the Company. Company has setup Environment Cell at unit level to address all the issues and concerns pertaining to environment and also to undertaken implementation of environment management plan in a time bound manner as per all the relevant laws and statutes. Environment Management Cell consists of diverse professionals from Environment, Mining, Geology & Planning which is headed by Vice president Mines.
12	The Project Authorities shall inform to the Regional Office located at Bangalore regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development works.	Agreed upon. We will intimate Final Closure upon receipt of IBM approved Final Mine Closure plan and its subsequent implementation during 2031-2033.
13	The funds earmarked for environmental protection measures shall be kept in a separate account and should not be diverted for other purposes. Year wise expenditure shall be reported to the Ministry and its Regional Office located at Bangalore.	Funds earmarked for Environment Protection are not diverted for any other purpose. Yearly compliance w.r.t to EMP implementation in the mine lease is reported under Progressive Mine Closer Plan / Environment Statement. Statement of Environment Expenditure in respect of ML No 2679 from 01 April to 30 September 2024 is enclosed in Annexure.
14	The Regional Office of this Ministry located at Bangalore shall monitor the compliance of the stipulated conditions. The project authorities should extend the full co-operation to the officer(s) of the Regional Office by furnishing the requisite data/information/monitoring reports.	Agreed. Full co-operation is being extended to the concerned authorities for monitoring compliance to stipulated conditions and necessary data/ information are provided.

SANDUR MANGANESE & IRON ORES LTD. SANDUR

	B. General Conditions:	
15	A copy of clearance letter will be marked to concerned Panchayath/local NGO, if any from whom suggestion/ representation has been received while processing the proposal.	Copy of clearance letter of EC has been submitted to Sushilanagar and Yeshwantnagar Panchayat from whom suggestions were received.
16	State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry Centre and Collector's Office / Tehsildar's Office for 30 days.	Copy of EC letter has been previously submitted to Regional KSPCB Office, DC at Ballari and Tahsildar at Sandur for display at their office.
17	The Project Authorities should advertise at least in two local Newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment and Forests at http://envfor.nic.in and a copy of the same shall be forwarded to the Regional Office of this Ministry located at Bangalore.	The advertisement was given in Kannada Prabha dated 31 January 2007 in vernacular language (Kannada) and in English daily of Indian Express on 31st January 2007.

for The Sandur Manganese & Iron Ores Limited.,

Krishna Reddy
Vice President Mines

SANDUR MANGANESE & IRON ORES LTD. ★ SANDUR

The Sandur Manganese & Iron Ores Limited

STATEMENT OF ENVIRONMENT EXPENDITURE FROM 01 APRIL TO 30 SEPTEMBER 2024
IN RESPECT OF MINING LEASE, NO 2679

Sl. No	Activity	Expenditure Incurred in ₹
1	Third Party Environment Monitoring	**3,70,210.00**
2	Dust Suppression system in mines	**28,55,559.00**
3	Afforestation, after care, Scrapping and Hoeing of Soil, de weeding, bush clearance	**8,86,878.00**
4	De-silting of Check Dams	**62,670.00**
5	De-silting of Rainwater Harvesting Pits	**44,690.00**
6	Construction of Retaining wall	**1,00,000.00**
7	Construction of Garland Drain	**23,787.00**
8	Back Filling	**90,868.00**
	Total	**44,34,662.00**

for The Sandur Manganese & Iron Ores Limited

Krishna Reddy
Vice President Mines

NEERLABBI MINE PIT

MINE PIT AT DABAXIKOLLA

MINE PIT AT GOVERNOR POINT

Scientific Mining Operations at Governor Point

Dust Suppression using water tanker at Governor Point

Dust Suppression on Haul road at Dabaxikolla-Governor Point

Dust Suppression at Neerlabbi Mine Pit

Static Sprinklers along haul road

Static Sprinkler at Weighbridge/Loading area at Governor Point

Static Sprinkler at Loading Point /Weigh bridge at Neerlabbi Mine Pit

Mandatory closure of loaded trucks with tarpaulins

Toe Wall built below the dump at Dabaxikolla Mine

Systematically terraced dump at Dabaxikolla

Toe Wall constructed for Surface Dumping

Masonry toe wall constructed at toe of waste dump with weep holes

R&R Dry Stone Wall constructed below toe of waste dump in Ramghad

Dry Stone Retaining wall constructed for D1/13 dump at Ramghad

Garland Drain constructed below toe of the dump for rainfall runoff water

Terracing and Geo-coir mats layed on the dumps at Governor Point

Geo-coir mats put on waste dump terrace at Dabaxikolla Pit

Geo-coir mats layed on dump terrace at Dabaxikolla Mine Pit

Silt Settling tank constructed at Governor Point Mine pit

Silt Settling tank constructed at Governor Point Mine pit

Silt Settling tank constructed outside the mine lease area

Silt Settling tank constructed in Dabaxikolla Mine pit

Stone masonry check dam constructed at Neerlabbi Mine Pit

Rainwater harvesting pit at Neerlabbi pit

Loose boulder check dam constructed within the mine lease

Reclaimed and Rehabilitated waste dump at Governor Point

Reclaimed and Rehabilitated waste dump at Dabaxikolla

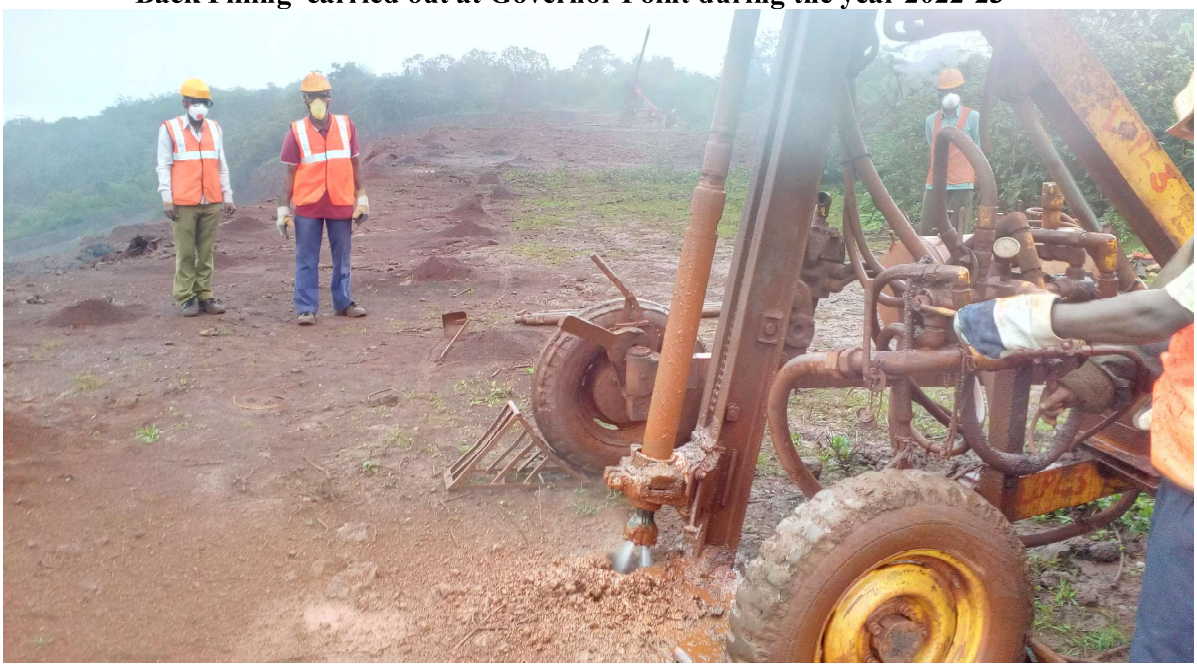
Stabilised waste dump at Dabaxikolla

Stabilized waste dump at Neerlabbi Mines

Stabilized dump at Neerlabbi Mines

Backfilling in Central Deposit adjacent to Neerlabbi Mine pit

Back Filling carried out at Governor Point during the year 2022-23



Wet Drilling practised at the Mine


SilentPower
Samsung Quad Camera
Shot with my Galaxy M31s


UNIT WORKSHOP


RAMGAD MANGANESE & IRON ORE MINE


RAMGAD MANGANESE & IRON ORE MINE


BIO-DEGRADABLE
WASTE


RAMGAD MANGANESE & IRON ORE MINE

Hazardous Waste Storage Room

VERMI COMPOST USED IN NURSERY TO SPEED UP THE GROWTH OF PLANTS

Centralised Nursery

Centralised Nursery developed at maintained at SB Halli

Garland Drain constructed during the Year 2022-23 measuring 50 meters

Provision of School bus for Children

Drinking Water Supply to Ramghad Village

The Sandur Manganese & Iron Ores Limited

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

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Fax: +91 80 4152 0182

Ref No: SMIORE/MINES/ENV/2024-25/2679/935

08 October 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 quarterly report pertaining to monitoring of environmental parameters in respect of Mining Lease No. 2679.

Ref: 1. Environmental Clearance No.110015/88/2006-IA.II(M) dated 24 January 2007.
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 prepared after monitoring the stipulated environmental parameters quarterly report from (July 2024 to September 2024) in respect of Mining Lease No. 2679 of The Sandur Manganese & Iron Ores Limited.

Kindly acknowledge the receipt of the reports.

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

Manjunath Prabhu,
Chief Operating Officer

The Sandur Manganese & Iron Ores Ltd.

Encl: Monitoring Reports
Cc: 1. The Member Secretary, Karnataka State Pollution Control Board, Bengaluru.
2. Integrated Regional Office, MoEF&CC, Bengaluru.

ENVIRONMENTAL LABORATORY

(UNIT OF MINERAL ENGINEERING SERVICES)

ISO 45001:2018

Accredited by NABL (TC-6172) Recognised by BIS, FSSAI, ISO:45001:2018 Certified Laboratory
MoEFCC(CPCB) under E(P) Act 1986 recognition valid upto 23.05.2025

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 : 23.09.2024
Ref : IS:10500-2012 Norms Amendment - 4 (Drinking Water Standards)

Sl. No.	Parameters	Date of sample collection	13.09.2024	13.09.2024	13.09.2024	Desirable Limts	Permissible Limts	Method of Testing
		Lab Code	N/24/09/4-0222	N/24/09/4-0223	N/24/09/4-0224			
		Sample Code	GW1	GW2	GW3			
			Results					
1	Colour (Hazen Units)		<1	<1	<1	5	15	IS:3025 (P-4) 2021
2	Odour		Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	IS:3025 (P-5) 2018
3	pH Value		6.68	6.97	7.90	6.5 to 8.5	6.5 - 8.5	IS:3025 (P-11) 2022
4	Turbidity,NTU, Max		0.8	1.5	2.60	1	5	IS:3025 (P-10)1984 RA 2017
5	Electrical Conductvity (µmhos/cm)		180.0	320.0	1630.0	--	--	IS 3025 (P-14)
6	Total Dissolved Solids,mg/l, Max		98.0	172.0	930.0	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		8.81	41.00	140.30	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		40.00	42.00	180.00	250	1000	IS:3025 (P-32) 1988 RA 2019
12	Fluoride (as F),mg/l, Max		0.38	0.51	0.73	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		2.92	1.45	25.00	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		2.50	8.35	21.40	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		8.10	38.50	120.00	200	400	IS:3025 (P-24) Sec 1 2022
19	Alkalinity (as $CaCO_3$) mg/l, Max		18.0	46.0	500.0	200	600	IS:3025 (P-23):1986 RA 2019
20	Total Hardness (as $CaCO_3$),mg/l,Max		34.0	16.0	600.0	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		16	22	35	--	--	IS:3025 (Part-45) 1993 RA2019
23	Potassium, (as K), mg/l, Max		4	<1	8	--	--	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		IS:15185:2016 RA 2021
31	Total Coliform /100ml)		Not Detected	Not Detected	Not Detected	any 100ml Sample		IS:15185:2016 RA 2021

"END OF REPORT"

BINUMANI
T.M.- Microbiology
Authorised Signatory

M. SACHIN RAJ
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

Note : This report is subject to the terms and conditions mentioned overleaf.

ENVIRONMENTAL LABORATORY

(UNIT OF MINERAL ENGINEERING SERVICES)

Accredited by NABL (TC-6172) Recognised by BIS, FSSAI, ISO:45001:2018 Certified Laboratory
MoEFCC(CPCB) under E(P) Act 1986 recognition valid upto 23.05.2025

ISO 45001:2018

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, GW5 - Subbarayanahalli Bore water**
Issue Date	**: 24.06.2024**

Ref : IS:10500-2012 Norms Amendment - 4 (Drinking Water Standards)

	Date of sample collection	13.09.2024	10.09.2024	10.09.2024	Desirable Limts	Permissible Limts	Method of Testing
	Lab Code	N/24/09/4-0225	N/24/09/3-0262	N/24/09/3-0261			
Sl. No.	Sample Code / Parameters	GW4	GW5	GW6			
	Parameters	Results					
1	Colour (Hazen Units)	<1	<1	<1	5	15	IS:3025 (P-4) 2021
2	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	IS:3025 (P-5) 2018
3	pH Value	8.15	7.12	7.97	6.5 to 8.5	6.5 - 8.5	IS:3025 (P-11) 2022
4	Turbidity,NTU, Max	2.1	1.8	1.2	1	5	IS:3025 (P-10)1984 RA 2017
5	Electrical Conductvity (µmhos/cm)	110.0	2300.0	1600.0	--	--	IS 3025 (P-14)
6	Total Dissolved Solids,mg/l, Max	616.0	1340.0	928.0	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	36.00	92.1	88.1	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	110.00	380.00	175.00	250	1000	IS:3025 (P-32) 1988 RA 2019
12	Fluoride (as F),mg/l, Max	0.48	0.91	0.52	1	1.5	IS:3025 (P-60) 2008 RA 2019
13	Iron (as Fe),mg/l, Max	<0.005	0.062	0.077	1.0	1.0	IS:3025 (Part-2) 2019
14	Magnesium (as Mg)mg/l, Max	19.40	65.60	97.20	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	20.50	36.50	24.00	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	60.00	240.00	126.00	200	400	IS:3025 (P-24) Sec 1 2022
19	Alkalinity (as $CaCO_3$) mg/l, Max	410.0	400.0	480.0	200	600	IS:3025 (P-23):1986 RA 2019
20	Total Hardness (as $CaCO_3$),mg/l,Max	170.0	500.0	620.0	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	40	90	166	--	--	IS:3025 (Part-45) 1993 RA2019
23	Potassium, (as K), mg/l, Max	5	<1.0	5	--	--	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"

BINUMANI
T.M.- Microbiology
Authorised Signatory

M. SACHIN RAJU
T.M. - CHEMICAL
Govt. Analyst / Authorised Signatory

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

Note : This report is subject to the terms and conditions mentioned overleaf.

ENVIRONMENTAL LABORATORY

(UNIT OF MINERAL ENGINEERING SERVICES)

Accredited by NABL (TC-6172) Recognised by BIS, FSSAI & CPCB:MoEFCC under E(P) A 1986 Vide Gazette Notification No. legal 42(3)/2022 dated 22.07.2022 Recognition valid upto 23.05.2023
ISO 45001:2018 Certified Laboratory
TC-6172

Table No. 22

TEST REPORT

RESULTS OF RESPIRABLE 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. Srinivasulu A

Report No : ELMES0182409

Issue Date : 01.10.2024

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 CONCEN--TRATION mg/m^3	*PERMIS--SIBLE LIMIT mg/m^3
						FROM	TO	TOTAL HRS		RPM	
1	16.09.2024	180	N/24/09/4-0295	Mine workers	Mohammed Rafi	8:50	16:50	8:00	684.0	1.32	3
2	16.09.2024	101	N/24/09/4-0296	Tipper Operator	Mahesh B	8:45	16:45	8:00	1056.0	0.95	3
3	16.09.2024	100	N/24/09/4-0297	Excavator Operator	Thippeswamy G	9:20	17:20	8:00	660.0	1.06	3
4	16.09.2024	181	N/24/09/4-0298	Jack Hammer Drilling Operator	Kariyappa	9:30	17:30	8:00	660.0	1.82	3
5	17.09.2024	182	N/24/09/4-0301	Wheel.Loader Operator	Kasim Saab	8:30	16:30	8:00	684.0	1.46	3
6	17.09.2024	183	N/24/09/4-0302	Spotter Waste Dump	Ganganna	9:00	17:00	8:00	1056.0	1.23	3
7	17.09.2024	184	N/24/09/4-0303	Tipper Operator	Oblesh	9:15	17:15	8:00	660.0	1.06	3
8	17.09.2024	185	N/24/09/4-0304	Water Tankers Operator	Ravi Kumar	9:35	17:35	8:00	660.0	0.76	3

STATIC SAMPLER

SL. NO	DATE OF SAMPLE COLLECTION	Filter paper code		LOCATION / CATEGORY	Name of the person	DURATION OF SAMPLING			Volume of air (Lts)	DUST CONCEN--TRATION mg/m^3	*PERMIS--SIBLE LIMIT mg/m^3
						FROM	TO	TOTAL HRS		RPM	
9	16.09.2024	102	N/24/09/4-0299	Dumping Point	Static	9:00	17:00	8:00	940.8	1.91	3.
10	16.09.2024	179	N/24/09/4-0300	Loading Point	Static	9:55	17:55	8:00	796.8	1.13	3
11	17.09.2024	186	N/24/09/4-0305	Weigh Bridge	Static	9:40	17:40	8:00	940.8	1.91	3
12	17.09.2024	187	N/24/09/4-0306	Haulage Road	Static	9:45	17:45	8:00	796.8	2.01	3

*Note: Free Slica 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/m^3 (Ref : DGMS Reg 124(2) of MMR,1961)

ARSHIYA KOUSAR
Dy. T.M. Chemical
Govt. Analyst / Authorised Signatory

948, 2nd Cross, St. Thomas Town Post, Kammanahalli, Bangalore - 560 084.
Phone : 080-25432969 E-mail : mesbng@gmail.com, www.envtest.in

Note : This report is subject to the terms and conditions mentioned overleaf.

ENVIRONMENTAL LABORATORY

(UNIT OF MINERAL ENGINEERING SERVICES)

Accredited by NABL (TC-6172) Recognised by BIS, FSSAI & CPCB:MoEFCC under E(P) A 1986 Vide Gazette Notification No. legal 42(3)/2022 dated 22.07.2022 Recognition valid upto 23.05.2023
ISO 45001:2018 Certified Laboratory
TC-6172

Table No. 23

TEST REPORT
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. Srinivasulu A

Report No : FS0294-030624094

Issue Date : 01.10.2024

SL.NO	DATE OF SAMPLE COLLECTION	LOCATION / CATEGORY	Name of the person / Static	Free Silica Content (%)	Free Silica Limits (%)
PERSONAL SAMPLER					
1	16.09.2024	Mine workers	Mohammed Rafi	ND	5
2	16.09.2024	Tipper Operator	Mahesh B	ND	5
3	16.09.2024	Excavator Operator	Thippeswamy G	ND	5
4	16.09.2024	Jack Hammer Drilling Operator	Kariyappa	ND	5
5	17.09.2024	Wheel.Loader Operator	Kasim Saab	ND	5
6	17.09.2024	Spotter Waste Dump	Ganganna	ND	5
7	17.09.2024	Tipper Operator	Oblesh	ND	5
8	17.09.2024	Water Tankers Operator	Ravi Kumar	ND	5
STATIC SAMPLER					
9	16.09.2024	Dumping Point	Static	ND	5
10	16.09.2024	Loading Point	Static	ND	5
11	17.09.2024	Weigh Bridge	Static	ND	5
12	17.09.2024	Haulage Road	Static	ND	5

Note: ND-Not Detected, Detection Level : 0.0005%

ARSHIYA KOUSAR
Dy. T.M. Chemical
Govt. Analyst / Authorised Signatory

948, 2nd Cross, St. Thomas Town Post, Kammanahalli, Bangalore - 560 084.
Phone : 080-25432969 E-mail : mesbng@gmail.com, www.envtest.in

Note : This report is subject to the terms and conditions mentioned overleaf.

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/2024-25/653

07 August 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 groundwater level and groundwater quality monitoring reports in respect of Mining Lease No. 2678 & 2679 for the monsoon season.

Ref: 1. KGWA NOC No.: KGWAN1554866756 dated 16 February 2024.
2. Environmental Clearance F.No. IA-J-11015/45/2021-IA-II(M) dated 25 April 2023.

We herewith submitting the groundwater level and groundwater quality monitoring data carried out for the monsoon season from the borewells and piezometers established in the core zone and buffer zone (Annexure-I), in respect of Mining Lease No. 2678 and 2679 of The Sandur Manganese & Iron Ores Limited, Sandur Taluk, Ballari District as per the conditions stipulated in NOC obtained from Karnataka Ground Water Authority and Environmental Clearance obtained from Ministry of Environment, Forest & Climate Change.

Kindly acknowledge receipt of the same.

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

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

The Sandur Manganese & Iron Ores Ltd., DEOGIRI

09/08/2024

Encl: Annexure I & Groundwater Quality Report.

Copy to: - 1) Senior Geologist, District Ground Water office, Ballari.
2) Integrated Regional Office, MoEF & CC, Bengaluru.
3) Member Secretary, Central Pollution Control Board.

Groundwater Level data for Monsoon Season in Core Zone

Sl No.	Bore well ID	Co-Ordinates in UTM (WGS84)		Bore well Locations	Depth of Water Level (m) BGL	Depth of Bore well (m)
		Easting	Northing			
1	RNJP	673779	1660983	Kammathuru	11.20	78.96
2	KKNH	676990	1659103	Kenchammanakolla	9.10	48.78
3	JLK	675442	1659438	Jaladikolla	31.15	48.78
4	RMK	673755	1658789	Ramakolla	77.70	117.38
5	AMK	671690	1658042	Alamaradakolla	33.10	97.26
6	CBG	671154	1657187	Chinnabudanagundu	39.05	122.56
7	KMK	668640	1658078	Kanigemaradakolla	81.40	127.74
8	NK	667610	1658284	Neerkolla	44.25	74.39
9	KVH BG	664282	1662003	Kanivehalli BG	40.35	92.68
10	CD	660030	1666841	Central Deposit	62.36	122.56

Groundwater Level data for Monsoon Season in Buffer Zone

Sl No.	Open well ID	Co-Ordinates in UTM (WGS84)		Open well Locations	Depth of Water Level (m) BGL	Depth of Open well (m)
		Easting	Northing			
1	1B2	647018	1677767	Dhanapur	2.15	5.85
2	2B3	645293	1672805	Devalapur	7.10	11.54
3	2A2	666523	1668210	Sandur	1.85	13.7
4	2B1	672619	1673264	Taranagar	9.40	10.74
5	3B5	675330	1659288	Deogiri	2.05	
6	1C1	656172	1657563	Bandri	1.35	8.26
7	1A4	664421	1650802	Choranuru	0.10	7.2
8	1B1	679131	1660998	Appayanahalli	1.25	8.22
9	2B2	675375	1648539	Sheliyappanahalli	0.10	22.64
10	1A1	688523	1655346	Melina kanive	1.00	8.27
11	NW	677609	1671717	Lingadahalli	2.10	12.05

The Sandur Manganese & Iron Ores Ltd. DEOGIRI

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

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

Speed Post

F.No. LB/99/7/2021-INST LAB-HO-CPCB-HO/Pvt./ 1601

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:

   i. **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.
   ii. **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.
   iii. **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,
   iv. **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).
   v. **Microbiological Test:** Total Coliform, Faecal Coliform, *E. coli, Faecal Streptococci* and Total Plate Count.
   vi. **Toxicological Tests:** Bioassay Method for Evaluation of Toxicity using Fish and Measurement of Toxicity Using Daphnia or Other Organism.
   vii. **Biological Test:** Macrophytic Identification, Planktonic Identification Count and Chlorophyll.

Contd.

'परिवेश भवन' पर्वी अर्जुन नगर, दिल्ली-110032
Parivesh Bhawan, East Arjun Nagar, Delhi-110032
दूरभाष/Tel : 43102030, 22305792, वेबसाईट/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 (NO_2), Sulphur Dioxide (SO_2), Total Suspended Particulate Matter, Respirable Suspended Particulate Matter PM_{10}, Ammonia, Carbon Monoxide, Chlorine, Lead, Ozone, Benzene Toluene Xylene (BTX), Polycyclic Aromatic Hydrocarbon (PAH) Benzo-a-Pyrine & 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 'ई' सरकारी विश्लेषक / Scientist 'E' Govt. Analyst
केंद्रीय प्रदूषण नियंत्रण बोर्ड
Central Pollution Control Board
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार
(M/o Environment, Forest & Climate Change, Govt. of India)
परिवेश 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 LABORATORY

(UNIT OF MINERAL ENGINEERING SERVICES)

ISO 45001:2018

Recognised by BIS, FSSAI, ISO:45001:2018 Certified Laboratory
Recognised by MoEFCC(CPCB) under E(P) Act 1986 & recognition is valid upto 23.05.2025

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	: **GW1 - Deogiri Mine Office Bore water, GW2 - Kammaturu Bore water, GW3 - Appayyanahalli (Narayanpura) Bore water**
Date of sample collection	: **09.07.2024**
Issue Date	: **17.07.2024**

Ref : IS:10500-2012 Norms Amendment - 4 (Drinking Water Standards)

Sl. No.	Lab Code / Sample Code / Parameters	N/24/07/02-0067 GW1	N/24/07/02-0068 GW2	N/24/07/02-0069 GW3	Desirable Limts	Permissible Limts	Method of Testing
		Results					
1	Colour (Hazen Units)	<1	<1	<1	5	15	IS:3025 (P-4) 2021
2	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	IS:3025 (P-5) 2018
3	pH Value	6.54	6.75	7.12	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 Conductvity (µmhos/cm)	120.0	290.0	1050.0	--	--	IS 3025 (P-14)
6	Total Dissolved Solids,mg/l, Max	80.0	180.0	658.0	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	12.00	24.00	121.82	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	16.72	42.00	133.32	250	1000	IS:3025 (P-32) 1988 RA 2019
12	Fluoride (as F),mg/l, Max	<0.1	<0.1	<0.1	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	4.86	14.58	39.66	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	2.30	1.53	18.00	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	12.50	5.80	78.90	200	400	IS:3025 (P-24) Sec 1 2022
19	Alkalinity (as $CaCO_3$) mg/l, Max	10.00	75.0	325.0	200	600	IS:3025 (P-23):1986 RA 2019
20	Total Hardness (as $CaCO_3$),mg/l,Max	50.0	120.0	467.0	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	12	64	-	-	IS:3025 (Part-45) 1993 RA2019
23	Potassium, (as K), mg/l, Max	<1	4	15	-	-	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"

BINUMANI
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ENVIRONMENTAL LABORATORY

(UNIT OF MINERAL ENGINEERING SERVICES)

ISO 45001:2018

Recognised by BIS, FSSAI, ISO:45001:2018 Certified Laboratory
Recognised by MoEFCC(CPCB) under E(P) Act 1986 & recognition is valid upto 23.05.2025

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 : GW4 - SB Halli Bore water (near hospital),
GW5 - Yeshwanthnagar Bore water (near railway track)
Date of sample collection : 09.07.2024
Issue Date : 17.07.2024
Ref : IS:10500-2012 Norms Amendment - 4 (Drinking Water Standards)

Sl. No.	Lab Code / Sample Code / Parameters	N/24/07/02-0070 GW4 Results	N/24/07/02-0071 GW5 Results	Desirable Limts	Permissible Limts	Method of Testing
1	Colour (Hazen Units)	<1	<1	5	15	IS:3025 (P-4) 2021
2	Odour	Agreeable	Agreeable	Agreeable	Agreeable	IS:3025 (P-5) 2018
3	pH Value	7.21	6.86	6.5 to 8.5	6.5 - 8.5	IS:3025 (P-11) 2022
4	Turbidity,NTU, Max	<0.1	<0.1	1	5	IS:3025 (P-10)1984 RA 2017
5	Electrical Conductvity (µmhos/cm)	1590.0	1180.0	--	--	IS 3025 (P-14)
6	Total Dissolved Solids,mg/l, Max	1050.0	860.0	500	2000	IS:3025 (P-16)1984 RA2017
7	Aluminium (as Al), Max	<0.005	<0.005	0.03	0.2	IS:3025 (P-2)2019
8	Boron (as B), mg/l, Max	<0.1	<0.1	0.5	2.4	IS:3025 (Part-57)2021
9	Calcium (as Ca),mg/l, Max	121.84	97.29	75	200	IS:3025 (P-40)1991 RA 2019
10	Copper (as Cu),mg/l, Max	<0.005	<0.005	0.05	1.5	IS:3025 (P-2)2019
11	Chloride as Cl (mg/l),mg/l, Max	254.98	47.14	250	1000	IS:3025 (P-32) 1988 RA 2019
12	Fluoride (as F),mg/l, Max	<0.1	<0.1	1	1.5	IS:3025 (P-60) 2008 RA 2019
13	Iron (as Fe),mg/l, Max	<0.005	<0.005	1.0	1.0	IS:3025 (Part-2) 2019
14	Magnesium (as Mg)mg/l, Max	23.33	52.06	30	100	IS:3025 (P-46)1994 RA 2019
15	Manganese (as Mn),mg/l, Max	<0.001	<0.001	0.1	0.3	IS:3025 (P-2) 2019
16	Nitrates (as NO_3),mg/l, Max	44.00	1.80	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	58.50	74.00	200	400	IS:3025 (P-24) Sec 1 2022
19	Alkalinity (as $CaCO_3$) mg/l, Max	405.0	570.0	200	600	IS:3025 (P-23):1986 RA 2019
20	Total Hardness (as $CaCO_3$),mg/l,Max	400.0	460.0	200	600	IS:3025 (P-21):2009 RA 2019
21	Zinc (as Zn),mg/l, Max	<0.005	<0.005	5	15	IS:3025 (P-2) 2019
22	Sodium, (as Na), mg/l, Max	164	135	--	--	IS:3025 (Part-45) 1993 RA2019
23	Potassium, (as K), mg/l, Max	25	21	--	--	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

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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 : 21.06.2024
Ref : IS:10500-2012 Norms Amendment - 4 (Drinking Water Standards)

Sl. No.	Parameters	Date of sample collection	12.06.2024	12.06.2024	12.06.2024	Desirable Limts	Permissible Limts	Method of Testing
		Lab Code	N/24/06/3-0154	N/24/06/3-0155	N/24/06/3-0156			
		Sample Code	GW1	GW2	GW3			
			Results					
1	Colour (Hazen Units)		<1	<1	<1	5	15	IS:3025 (P-4) 2021
2	Odour		Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	IS:3025 (P-5) 2018
3	pH Value		6.69	6.71	6.85	6.5 to 8.5	6.5 - 8.5	IS:3025 (P-11) 2022
4	Turbidity,NTU, Max		0.5	<0.1	2.10	1	5	IS:3025 (P-10)1984 RA 2017
5	Electrical Conductvity (µmhos/cm)		295.0	320.0	1170.0	--	--	IS 3025 (P-14)
6	Total Dissolved Solids,mg/l, Max		180.0	195.0	732.0	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		24.04	31.07	97.29	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		42.00	19.26	99.86	250	1000	IS:3025 (P-32) 1988 RA 2019
12	Fluoride (as F),mg/l, Max		0.20	0.40	0.50	1	1.5	APHA 23rd Edition 4500F
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		14.58	11.40	52.06	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		1.53	3.46	4.62	45	45	IS:3025 (P-34) 2024
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		6.50	18.20	84.90	200	400	IS:3025 (P-24) Sec 1 2022
19	Alkalinity (as $CaCO_3$) mg/l, Max		75.0	155.0	480.0	200	600	IS:3025 (P-23):1986 RA 2019
20	Total Hardness (as $CaCO_3$),mg/l,Max		120.0	124.0	457.0	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		12	18	32	--	--	IS:3025 (Part-45) 1993 RA2019
23	Potassium, (as K), mg/l, Max		2	<1	6	--	--	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-2) 2019
30	Escherichia coli/100ml		Not Detected	Not Detected	Not Detected	Shall not be detectable in		IS:15185:2016 RA 2021
31	Total Coliform /100ml)		Not Detected	Not Detected	Not Detected	any 100ml Sample		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, GW5 - Subbarayanahalli Bore water
Issue Date	: 24.06.2024

Ref : IS:10500-2012 Norms Amendment - 4 (Drinking Water Standards)

	Date of sample collection	12.06.2024	10.06.2024	10.06.2024	Desirable Limts	Permissible Limts	Method of Testing
	Lab Code	N/24/06/3-0157	N/24/06/3-0106	N/24/06/3-0105			
Sl. No.	Sample Code / Parameters	GW4	GW5	GW6			
		Results					
1	Colour (Hazen Units)	<1	<1	<1	5	15	IS:3025 (P-4) 2021
2	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	IS:3025 (P-5) 2018
3	pH Value	7.15	7.43	7.50	6.5 to 8.5	6.5 - 8.5	IS:3025 (P-11) 2022
4	Turbidity,NTU, Max	0.8	<0.1	<0.1	1	5	IS:3025 (P-10)1984 RA 2017
5	Electrical Conductvity (µmhos/cm)	1090.0	1178.0	1388.0	--	--	IS 3025 (P-14)
6	Total Dissolved Solids,mg/l, Max	682.0	980.0	1100.0	500	2000	IS:3025 (P-16)1984 RA2017
7	Aluminium (as Al), Max	<0.005	0.018	0.043	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	116.92	129.05	138.94	75	200	IS:3025 (P-40)1991 RA 2019
10	Copper (as Cu),mg/l, Max	<0.005	0.014	0.036	0.05	1.5	IS:3025 (P-2)2019
11	Chloride as Cl (mg/l),mg/l, Max	128.25	266.13	402.61	250	1000	IS:3025 (P-32) 1988 RA 2019
12	Fluoride (as F),mg/l, Max	0.20	0.30	0.60	1	1.5	APHA 23rd Edition 4500F
13	Iron (as Fe),mg/l, Max	<0.005	0.081	0.094	1.0	1.0	IS:3025 (Part-2) 2019
14	Magnesium (as Mg)mg/l, Max	56.02	46.66	39.66	30	100	IS:3025 (P-46)1994 RA 2019
15	Manganese (as Mn),mg/l, Max	<0.001	0.013	0.084	0.1	0.3	IS:3025 (P-2) 2019
16	Nitrates (as NO_3),mg/l, Max	14.90	3.90	6.20	45	45	IS:3025 (P-34) 2024
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	102.00	48.00	71.80	200	400	IS:3025 (P-24) Sec 1 2022
19	Alkalinity (as $CaCO_3$) mg/l, Max	375.0	362.0	397.8	200	600	IS:3025 (P-23):1986 RA 2019
20	Total Hardness (as $CaCO_3$),mg/l,Max	522.0	514.0	510.0	200	600	IS:3025 (P-21):2009 RA 2019
21	Zinc (as Zn),mg/l, Max	<0.005	0.071	0.15	5	15	IS:3025 (P-2) 2019
22	Sodium, (as Na), mg/l, Max	48	150	210	--	--	IS:3025 (Part-45) 1993 RA2019
23	Potassium, (as K), mg/l, Max	6	14	18	--	--	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-2) 2019
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

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