



स्टील अथॉरिटी ऑफ इंडिया लिमिटेड
STEEL AUTHORITY OF INDIA LIMITED
केंद्रीय खनन एवं रसद संगठन
CENTRAL MINING & LOGISTICS ORGANIZATION
ओडिशा खान समूह
ODISHA GROUP OF MINES
बोलानी अयस्क खदान
BOLANI ORES MINES

Ref No: - CGM/B-745

Date: 30.11.2025

To

Dy. Director General of Forests (Central),
Ministry of Environment, Forest and Climate Change,
Regional Office (EZ),
A/3, Chandersekharapur,
Bhubaneswar – 751023


Sub: Six monthly status of compliance to the conditions stipulated in the Environmental Clearance granted by MoEF&CC for 15000 TPA Manganese Ore production from 6.90 sq. Miles ML vide letter no. J-11015/396/2008-IA.II (M) DATE-21.12.2012, for the period of April-2025 to September-2025.

Sir,

Please find enclosed herewith the Six monthly compliance report for the period April-2025 to September-2025 with respect to the conditions stipulated by GoI, MoEF&CC, New Delhi, in the Environmental Clearance grant order of Bolani Manganese Ore Mines for the production of 15000 TPA Manganese Ore from 6.90 sq Miles ML vide ministry's letter no.J-11015/396/2008-IA.II (M) DATE-21.12.2012.

Thank you,

Yours faithfully,


Chief General Manager (Mines)
Bolani Ores Mines, CMLO M/s SAIL

Encl: As above

Copy:

1. Director, IA Division, MoEF&CC, GOI, Indira Paryavaran Bhavan, Aliganj, Jor Bagh Road, New Delhi - 110 003.
2. The Member Secretary, State Pollution Control Board, Paribesh Bhawan, A/118, Nilkantha Naga, Unit – VIII, Bhubaneshwar – 751 012, Odisha

**SIX-MONTHLY
EC COMPLIANCE
REPORT (6.90 ML)**
FOR THE PERIOD APR'2025-SEP'2025

**EC GRANT ORDER
J-11015/396/2008-IA.II (M)
DATE-21.12.2012
PERIOD: APR'2025-SEP'2025**

**Lessee: Bolani Manganese & Iron Ore Mines
(6.90 ML, 1586.36 ha)**



***BOLANI ORES MINES
CMLO-OGOM
M/S SAIL***

SPECIFIC CONDITIONS

- 1) **Environmental Clearance is subject to obtaining clearance under the Wildlife (Protection) Act, 1972 from the competent authority, as applicable.**

Compliance: Complied.

Provision of Wildlife (Protection) Act, 1972 is not attracted to the Project proponent as the project is not located within any protected area or ESZ of any protected area.

- 2) **The mining operation shall be restricted to above ground water table and it shall not intersect groundwater table. In case of working below the ground water table, Prior approval of the Ministry of Environment & Forest and Central Ground Water Authority shall be obtained, for which a detailed hydro-geological study shall be carried out. The project proponent shall ensure that no natural watercourse and/or water resources shall be obstructed due to any mining operations.**

Compliance: Complied.

The bottom level of all the operating quarries are above Ground water table as on date. Bolani Ores Mines confirm that the mining operation will be restricted to above the ground water table and will not intersect the groundwater table. In case of working below the groundwater table, prior approval from the Ministry of Environment & Forest and Central Ground Water Authority will be obtained, following a detailed hydro-geological study. It is ensured that no natural watercourse or water resources will be obstructed due to any mining operations.

- 3) **Mitigation measures to control RSPM levels shall continue to be implemented and air quality data will also be collected during operation of the mines. The data so collected shall be analyzed to see the effectiveness of the mitigation measures implemented. Based on the same, additional safeguard measures, as may be required shall be implemented in the project.**

Compliance: Complied.

Mitigation measures are regularly implemented to control the RSPM levels. Bolani Ores Mines, M/s SAIL has completed the implementation of following mitigation measures:

- a) Repaired and blacktopped the Road from Karo Bridge to Bolani entry point (3.2 km) at a cost of Rs.732 lakhs.
- b) Repaired and blacktopped the Balagoda - Bolani road (2.4 km) at a cost of Rs.20 lakhs.
- c) Dust suppression measures are strengthened by increasing frequency of plying of mobile sprinklers as such 03 no's 9KL Mobile sprinklers are deployed by BOM for Dust suppression on all internal and external roads including Haul roads to control the RSPM levels.
- d) 01 No Truck mounted vacuum based Road sweeping machine at a cost of Rupees 73.75 Lakhs has been purchased in 2023-24 and being operated on the internal concrete /black topped roads.
- e) Dry Fog Dust suppression system has been installed in the 600 TPH Crushing & Screening Plant and loading plant.

- f) In addition to mobile water sprinkling on haul roads, fixed water sprinkling facility for 350 meters length has been extended to the Public roads inside this lease.
- g) Fixed water sprinkling system has been installed along the roads around the loading plant area.
- h) Truck Mounted Mist cannon with a throw of 40-50m has been procured and deployed.
- i) Two (2) nos of rotating fog cannons has been installed in the Lump Loading Plant and Two (2) nos of rotating fog cannons has been installed in the fines loading plant.

Photographs showing implementation of above said Air Pollution control measures enclosed at **Annexure-I** & the monitoring reports of RSPM for the last six months is enclosed at **Annexure-II**.

Regular Environmental monitoring/audit is the part of the Environmental Management System (EMS) implemented at Bolani Ore Mines. For conformance of the air quality to the applicable norms and thereby effectiveness of the pollution control equipment / facilities is regularly reviewed for taking up any additional safeguard measures, if any required.

- 4) **The biological survey shall be repeated during October- December and mid-May month to see the existence of wildlife corridors, if any. Based on the same, necessary Wildlife Conservation Plan as may be required shall be prepared and implemented in consultation with the state Forest and Wildlife Department.**

Compliance: Complied.

Necessary biological surveys were conducted by expert committees and Wild Life Experts and based on the same, Site Specific Wildlife Conservation Plan has been prepared and approved by the state Forest and Wildlife Department vide order no 10680/1WL-FC-Mrl-SSP-228/2018 Dt.22.11.2018 with a total financial outlay of Rs.1088.431 lakhs. An amount of Rs.772.999 lakhs has already been deposited in CAMPA account of Forest Dept. for interventions in Project impact area.

The Study revealed no Wildlife corridors within the Mining Lease area.

- 5) **The biological survey shall also be undertaken to identify the trees with orchids, if any such trees, so identified shall be protected and if need be, these trees may be relocated.**

Compliance: Complied.

Detailed study of the area for identification of orchids by the MoEF&CC empaneled consultant, M/s Grow Green Consortium Pvt. Ltd, had been completed. A Report based on survey including recommendations for preservation of the species has been submitted to Regional Office of MoEF&CC vides our letter no. BOM/ENV/HD-1707A Dt.17.07.2019.

- 6) **The Over Burden (OB) generated during the mining operation shall be stacked at earmarked dump sites(s) only and should not be kept active for long period. 1.775 million M³ of waste will be generated during the conceptual period, which will be partly backfilled (74%). In critical areas, use of geo textiles shall be undertaken for stabilization of the dump. Monitoring and management of rehabilitated areas should continue until the vegetation**

becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forest and its Regional Office located at Bhubaneswar on six monthly bases.

Compliance: Complied.

Mining of Manganese Ore is carried out in already broken-up area. Over Burden (OB) generated from the mines is dumped at earmarked sites as per the IBM approved review of Mining Plan. All inactive dumps shall be reclaimed and rehabilitated as per the provisions of the Mining Plan

- 7) **Catch drains and siltation ponds of appropriate size shall be constructed to arrest silt and sediment flows from mine working, soil, OB and mineral dumps. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly de-silted particularly after monsoon and maintained properly.**

Garland drain of appropriate size, gradient and length shall be constructed for both mine pit and OB Dump and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of slit material. Sedimentation pits should be constructed at the corners of the garland drains and desilted at regular intervals.

Compliance: Complied.

The production of Manganese Ore during 2024-25 was restricted to Quarry-5 only. No OB has been generated during 2024-25 against the planned quantity. Hence, there was no substantial dumping. However, installation of retaining wall with Garland drain around Quarry-5 and Quarry-10 for effective runoff management is completed.

- 8) **Dimension of retaining wall at the toe of dumps and OB benches within the mine to check run-off and siltation should be based on the rainfall data.**

Compliance: Complied.

The following actions are taken for compliance:

- (1) Garland drain and sedimentation pit around Mineral stack yards has been provided and are de-silted after monsoon regularly.
 - (2) The size of the settling pits are designed so that, the runoff discharge gets ample time for settling and quality from runoff management system meets the prescribed standards.
- 9) **The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna namely elephant, sloth bear etc. Spotted in the study area. All the safeguard measures brought out in the wild life conservation plan so prepared specific to this project site and approved by the chief conservator of forests (wildlife) shall be effectively implemented. A copy of wildlife conservation plan shall be submitted to the ministry of environment and forests and its regional office, Bhubaneswar.**

Compliance: Complied.

Necessary biological surveys were conducted by expert committees and Wild Life Experts and based on the same, Site Specific Wildlife Conservation Plan has been prepared and approved by

the state Forest and Wildlife Department vide order no 10680/1WL-FC-Mrl-SSP-228/2018 Dt. 22.11.2018 with a total financial outlay of Rs.1088.431 lakhs. An amount of Rs.772.999 lakhs has already been deposited in CAMPA account of Forest Dept. for interventions in Project impact area.

The Study revealed no Wildlife corridors within the Mining Lease area.

- 10) **The critical parameters such as RSPM (Particulate matter with size less than 10 micron i.e. PM10) and NOx in the ambient air within the impact zone, peak particle velocity at 300 m distance or within the nearest habitation, whichever is closer shall be Monitored periodically. Further, quality of discharged water shall also be monitored [TDS, DO, PH and Total Suspended Solids (TSS)]. The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in public domain. The Circular No. J-20012/1/2006- IA.II(M) dated 27.05.2009 issued by Ministry of Environment and Forest, which is available on the website of the Ministry www.envfor.nic.in shall also be referred in this regard for the compliance.**

Compliance: Complied.

The ambient monitoring locations and parameters are as follows:

AMBIENT AIR QUALITY MONITORING STATIONS				
SL. NO.	LOCATION	PARAMETERS MONITORED	ZONE	REMARKS
1	CISF Colony	PM10, PM2.5	BUFFER/IMPACT ZONE (5.10 ML)	CAAQMS (Online)
2	Campus Office	PM10, PM2.5, SO _x , NO _x	BUFFER/IMPACT ZONE (5.10 ML)	CAAQMS (Online)
3	JNRC	PM10, PM2.5	CORE ZONE (6.90 ML)	CAAQMS (Online)
4	Near Karo Bridge	PM10, PM2.5	CORE ZONE (6.90 ML)	CAAQMS (Online)
5	Bolani Village Community Centre	PM10, PM2.5, SO ₂ , NO _x & CO	CORE ZONE (6.90 ML)	AAQMS (Manual)
6	DAV Public School	PM10, PM2.5, SO ₂ , NO _x & CO	CORE ZONE (6.90 ML)	AAQMS (Manual)
7	Main Gate	PM10, PM2.5	BUFFER/IMPACT ZONE (5.10 ML)	AAQMS (Manual)
8	Bolani Mines Office Complex	PM10, PM2.5	BUFFER/IMPACT ZONE (5.10 ML)	AAQMS (Manual)
9	Limtur Village (Near Quarry-5)	PM10, PM2.5	CORE ZONE (6.90 ML)	AAQMS (Manual)
10	Karo Guest House	PM10, PM2.5	CORE ZONE (6.90 ML)	AAQMS (Manual)

1. The peak particle velocity was monitored in June- 2025 at these following locations (at 300 m distance or within the nearest habitation):

SL. NO.	LOCATION
1	Near F-Area Hopper
2	Near Bolani Hospital

3	Near DAV Public School Bolani
4	Near Laxmi Mandap Bolani

2. The report of Peak Particle Velocity is enclosed in **Annexure – III**.
3. The critical parameters such as RSPM (Particulate matter with size less than 10 micron i.e. PM10) and NOx in the ambient air are monitored within the impact zone, within the nearest habitation which falls inside lease area.
4. 04 AAQ monitoring station are online type
5. Beneficiation plant in the adjoining 5.10 sq. Mile ML is not operational and hence there no effluent generation. However, quality of Monsoon Runoff water was monitored [all parameters including TDS, DO, PH and Total Suspended Solids (TSS)] quarterly.
6. Surface water of various Streams in and around ML area is being monitored quarterly.
7. The monitored data is submitted along with six monthly compliance reports being uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in public domain.

The Environment parameter monitoring Reports are enclosed as **Annexure-II**.

The Collected Data is analyzed regularly to identify, predict and evaluate the environmental impacts of the ongoing mining and allied activities. Accordingly, potential impacts on environment have been assessed and suitable Environmental Management Plan has been formulated.

Chief General Manager (Mines)
Bolani Ores Mines, CMLO, M/s SAIL

GENERAL CONDITIONS

- 1) **No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests**

Compliance: Complied.

There is no change in Mining technology or scope of work from that which is approved in Mining Plan/Review of Mining Plan. Prior approval from MoEF&CC shall be sought to change Mining technology or scope of work.

- 2) **No change in the calendar plan including excavation, quantum of mineral iron ore and waste should be made.**

Compliance: Complied.

No change in the calendar plan including excavation, quantum of mineral iron ore and waste will be made.

- 3) **The project proponent shall obtain Consent to establish from the State Pollution Control Board, Orissa and effectively implement all the conditions stipulated therein.**

Compliance: Complied.

The Extension of validity of Consent to Establish granted vide Order no. 23403/Ind-II-NOC-5374 dt. 21.02.2013, has been granted vide Order no. 4897/IND-II-NOC-5374 dt 22/05/2019, till 20.12.2023, 21.03.2024 Subsequently, CTO has been granted vide no. 6489/IND-I-CON-6442 Dt. 28/03/2025 with valid up to 05 years i.e. 31.03.2030.

The conditions stipulated vide the said grant orders are effectively implemented and a compliance report has already been submitted to OSPCB during grant of consent to operate.

- 4) **A final mine closure plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forest 5 years in Advance of final mine closure for approval.**

Compliance: Complied.

Final Mine Closure plan along with details of Corpus fund will be submitted to the Ministry 5 years in advance of final mine closure for approval. However, the Progressive Mine Closure Plan (PMCP) has been approved by IBM vide their letter no. MRMP/A/16-ORI/BHU/2021-22 Dt. 05.08.2021.

- 5) **The project proponent shall practice Suitable rain water harvesting measures on long term basis and work out detailed scheme rain water harvesting in consultation with Central Ground Water Authority and submit a copy of the same to the Ministry of Environment & Forests and its Regional Office, Bhubaneswar.**

Compliance: Complied.

The Rainwater Harvesting measures, proposed in report of “Technical Feasibility Study on Rain Water Harvesting & Master Plan for Ground Water Recharges” by consultant, M/s KRG Rainwater Foundation, have been approved by CGWB Bhubaneswar vide their letter no.: 5-22/CGWA/ SER/2018-19-1306 Dt. 26.12.2018.

Meanwhile, departmental initiatives for Soil and moisture Conservation had been taken up, measures such as de-silting of network of seasonal water channels, Plantations of drought hardy plant species on the degraded lands, water harvesting structures along seasonal channels, have been taken up by Bolani Ore Mines, SAIL to augment ground water recharge, as per schemes prepared with in-house expertise, in line with prevailing guidelines of CGWB. Bolani Ore Mines is not using any ground water either for domestic purpose or for industrial purpose, neither has any plan to do so for future mining activities.

- 6) **Vehicular emissions should be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of Mineral. The vehicles should be covered with a tarpaulin and shall not be overloaded.**

Compliance: Complied.

1. Regular emission monitoring of HEMM and Light vehicles deployed by BOM in Mining operations is done by Mechanical Maintenance section of BOM to ensure emission within norms.
2. Preventive Maintenance of all these HEMM & light vehicles is undertaken by Mechanical Maintenance section regularly to keep the vehicular emissions under control.
3. All the vehicles engaged in mining and transporting activity in the mine has Pollution under Control (PUC) certificate.
4. The ore is transported to various Steel Plants, through Railway wagons only.
5. The list of vehicles engaged and their PUC details are mentioned as follows and are enclosed in **Annexure – IV**

Sl No.	Equipment Type	Area	Equip. No.	Make	PUC Validity
1	ROAD SWEEPER	Mechanical	OD09V7220	Tata Motors	24-06-2026
2	EXPLOSIVE VAN	Mines	OD09C6302	Tata Motors	10-04-2026
3	EXPLOSIVE VAN	Mines	OD09V9850	Ashok Leyland	30-12-2026
4	DIESEL BOWSER	Mines	OD09V2926	Ashok Leyland	28-09-2026
5	DIESEL BOWSER	Mines	UP16BT8809	Ashok Leyland	10-04-2026
6	TRUCK	Mechanical	OD09P1842	Mahindra	28-09-2026
7	TRUCK	Store	OD09V7507	Eicher	14-07-2026
8	TRUCK	Mechanical	OD09V5010	Mahindra	24-01-2026
9	TRUCK	OPP	OD09P3263	Tata Motors	28-09-2026
10	MIST CANNON TRUCK	E & L	OD09P6495	Eicher	28-09-2026
11	WATER TANKER	Mines	OD09A2122	Ashok Leyland	10-04-2026
12	WATER TANKER	Mines	OD09W7884	Ashok Leyland	11-07-2026
13	WATER TANKER	Mines	OD09V9936	Tata Motors	05-01-2026
14	MAINT. VAN	Mechanical	OR09Q9263	Tata Motors	10-04-2026
15	AMBULANCE	Hospital	OD09K3343	Tata Motors	28-09-2026
16	AMBULANCE	Hospital	OD09AA9536	Tata Motors	06-02-2026
17	SCHOOL BUS	Mines	OD09A0946	Tata Motors	10-04-2026
18	SCORPIO-S11	CGM Pool	OD09K6668	Mahindra	03-10-2026
19	BOLERO JEEP	Plant	OD09K3576	Mahindra	03-10-2026

20	BOLERO JEEP	Mines	OD09C2376	Mahindra	10-04-2026
21	BOLERO JEEP	Electrical	OD09C2375	Mahindra	10-04-2026
22	BOLERO JEEP	Mines	OD09C2374	Mahindra	10-04-2026
23	BOLERO JEEP	CGM Pool	OD09V1162	Mahindra	30-05-2026
24	BOLERO CAMPER	Survey	OD09C2371	Mahindra	10-04-2026
25	BOLERO CAMPER	Electrical	OD09C2372	Mahindra	10-04-2026
26	BOLERO CAMPER	Plant	OD09C2373	Mahindra	12-04-2026
27	BOLERO CAMPER	Plant	OD09K2575	Mahindra	03-10-2026
28	BOLERO CAMPER	Mechanical	OD09K2576	Mahindra	03-10-2026
29	TATA YODHA CAMPER	Mechanical	OD09W8346	Tata Motors	11-07-2026
30	TATA YODHA CAMPER	Civil	OD0;9W8376	Tata Motors	11-07-2026

- 7) **No Blasting shall be carried out after the sunset. Blasting operation should be carried out only during the day time. Controlled Blasting should be practiced. The mitigates measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented. Drills shall either be operated with the dust extractors or equipped with water injection system.**

Compliance: Complied.

No Blasting has been carried out in the Manganese Mining (6.90 ML) area for winning of ore at BOM during 2024-25.

- 8) **Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer point should also have efficient dust control arrangements. These should be properly maintained and operated.**

Compliance: Complied.

Dry Fog Dust Suppression system has been installed in Loading and dispatch plant and the same is also well maintained through Annual Maintenance contracts by respective unit and is always kept functional during plant operation. The photographs of such air pollution control measures were submitted in earlier compliance reports and are enclosed as **Annexure - I**. In the Mineral handling areas such as Loading plant area, High Pressure fixed dust suppression system in 600 TPH Plant and fixed water sprinkling systems have been provided.

- 9) **Sewage treatment plant shall be installed for the colony. ETP should also be provided for the workshop and wastewater generated during mining operation.**

Compliance: Complied.

Based on the conceptual plan submitted by IIT KGP a detail feasibility report (FR), Technical Specification (TS) for STP of capacity 2.4 MLD Capacity has been prepared by CET, an in-house consultant of SAIL, for execution. Implementation period of the job is 24 months. In this regard, Two Work Orders have been issued for laying of Drainage Network and Construction of STP at financial outlays of Rs. 4.40 crores and Rs. 6.68 crores respectively. The Job of installing the drainage network is completed. Construction of STP is under progress. Meanwhile, individual septic tanks followed by soaking pits have been provided in all quarters and office locations.

The following actions are taken for compliance:

- a) There is no maintenance activity of Mining Machineries is carried out inside this ML area. The contractor does the maintenance activities at his own premises. Hence, Installation of ETP is not applicable.
- b) However, washing of all the light vehicles plying inside this ML and equipment's and equipment maintenance are carried out at designated workshops and washing bays inside 5.10 Sq Mile ML, which are provided with ETPs (Oil and Grease catch traps) to collect and treat workshop effluent. Further, revamping of these ETPs has been undertaken. Installation of One no Mechanical ETP has been completed and installation of another one is under progress.
- c) The quality of the treated water conforms to the prescribed standards.

The discharge from these ETPs conforms to the prescribed standard for discharge. The consolidated Environmental Monitoring analysis report of discharge from these ETPs is submitted herewith as **Annexure-VI**.

- 10) **Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.**

Compliance: Complied.

1. Pre-placement medical examination and periodical medical examination of the workers engaged in the project is being carried out and records maintained.
2. Schedule of health examination of the workers has been drawn and is being followed accordingly.

The summary of medical examinations carried out during 2024-25, as on date 30th September 2025 of preparation of this report, is as follows:

Contractual workers		Employees	
Pre-placement medical examination	Periodical medical examination	Pre-placement medical examination	Periodical medical examination
374 nos.	207 nos.	6 nos.	80 nos.

- 11) **Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.**

Compliance: Complied.

1. In compliance to conditions of Forest Clearance grant order, no forest land is being used for housing of laborers. As such, the laborers engaged in the construction activity belong to nearby villages.
2. The housing of construction labour are allotted company's quarters in township as per availability where there is proper sanitation facilities and health care in company's hospital are provided to them

3. However, provision are made, as and when necessary, for the housing of construction workers adjacent to the construction sites, in non-forest lands, in the form of temporary structures removed after the completion of the project.

- 12) **Regular monitoring of ground water level and quality should be carried out in and around the mines lease by establishing a network of existing wells and installing new piezometers during the operation. The periodic monitoring (at least four times in a year: Pre- monsoon (April-May) monsoon (august), Post monsoon (November) and winter (January); once in each season) shall be carried out in consultation with the State Ground Water Board / Central Ground Water Authority and the data thus collected may be sent regularly to the Ministry of Environment and Forests and its Regional Office, Bhubaneswar, the Central Ground Water Authority and Regional Director, Central Ground Water Board. If at any stage, it is observed that the groundwater table is getting depleted due to the mining activity; necessary corrective measures shall be carried out.**

Compliance: Complied.

As per present practice, monitoring of ground water quality and levels of existing wells inside the ML area is done quarterly in the existing wells of Bolani and Balagoda Village and data is submitted along with compliance reports. Regular monitoring of ground water level and quality is carried out in and around 6.90 ML of Bolani Ores Mines from a network of existing wells. The data is collected four times a year as directed and the same is regularly sent along with the six-monthly EC compliance reports to Ministry of Environment, Forest & Climate Change and its Regional Office, Bhubaneswar, Central Ground Water Authority and Regional Director, Central Ground Water Board.

The report of Ground Water Level is enclosed in **Annexure – VI**.

- 13) **The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water, if any, required for the project.**

Compliance: Complied.

1. Necessary permission of competent authorities has been obtained for drawl of requisite quantity of surface water, required for the project.
2. Water Drawl agreement for drawing 7 cusec (for envisaged level of production) of surface water from Karo River and tributaries has been executed with Executive Engineer, Baitarini Division, Salapada vide agreement no. 839 Dt.21.02.2025, with validity of 01 year.
3. The average water consumption during the period is 0.6 Cusec, which is within the permitted quantity.

Presently the average consumption is well within the permitted quantity.

- 14) **The Company shall submit within 3 months their policy towards Corporate Environment Responsibility which should inter- alia provide for (i) Standard operating process/ process to bring into focus any infringement/ deviation/ violation of the environmental or forest norms/ conditions, (ii) Hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the EC conditions and (iii) System of reporting of non- compliances / violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders.**

Compliance: Complied.

The Policy towards Corporate Environmental Responsibility including details of set up have been submitted to Ministry vide our letter no RMD/ BOM/E&L/5.1sqMiles/EC/2013/91 dt 18-03-2013. Necessary steps are being taken for implementation of the same (common for the adjoining 5.10 sq. miles ML of SAIL) regularly.

SAIL has always been environmentally conscious and responsible company. Way back in 1996, it was a pioneer in adopting a Corporate Environmental Policy. In view of the rapid technological advancements in the past two decades and growing stringency of regulatory requirements, SAIL has revised its Environmental Policy and made “Corporate Environmental Vision, Policy and Responsibility”, which is under implementation and copy of the same had been attached in EC compliance report for the period of Oct’15 to Mar’16 submitted vide letter no. BOM/ENV/5.1/HD-3600 Dt.30.06.2016

- 15) **At least four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10 micron i.e. PM10) and 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 State Pollution Control Board.**

Compliance: Complied.

Four ambient air quality- monitoring stations have been established in the core zone as well as in the Buffer/Impact zone for RSPM (for particulate matter with size less than 10 micron i.e. PM10), and gaseous monitoring. The revised locations of Air quality monitoring stations have been decided in consultation with State Pollution Control Board vide our letter no CGM/B-967 dt. 24/07/2024. The details of AAQ monitoring locations are provided, as follows:-

AMBIENT AIR QUALITY MONITORING STATIONS				
SL. NO.	LOCATION	PARAMETERS MONITORED	ZONE	REMARKS
1	CISF Colony	PM10, PM2.5	BUFFER/IMPACT ZONE (5.10 ML)	CAAQMS (Online)
2	Campus Office	PM10, PM2.5, SO _x , NO _x	BUFFER/IMPACT ZONE (5.10 ML)	CAAQMS (Online)
3	JNRC	PM10, PM2.5	CORE ZONE (6.90 ML)	CAAQMS (Online)
4	Near Karo Bridge	PM10, PM2.5	CORE ZONE (6.90 ML)	CAAQMS (Online)
5	Bolani Village Community Center	PM10, PM2.5, SO ₂ , NO _x & CO	CORE ZONE (6.90 ML)	AAQMS (Manual)
6	DAV Public School	PM10, PM2.5, SO ₂ , NO _x & CO	CORE ZONE (6.90 ML)	AAQMS (Manual)
7	Main Gate	PM10, PM2.5	BUFFER/IMPACT ZONE (5.10 ML)	AAQMS (Manual)

8	Bolani Mines Office Complex	PM10, PM2.5	BUFFER/IMPACT ZONE (5.10 ML)	AAQMS (Manual)
9	Limtur Village (Near Quarry-5)	PM10, PM2.5	CORE ZONE (6.90 ML)	AAQMS (Manual)
10	Karo Guest House	PM10, PM2.5	CORE ZONE (6.90 ML)	AAQMS (Manual)

The details of the Environmental parameter monitoring stations are provided in compliance status of Special Condition No. 10 above. The AAQ monitoring reports for the Compliance period are enclosed as **Annexure – II**.

- 16) **Data on Ambient Air Quality [(RSPM (Particulate matter with size less than 10 micron i.e. PM10 (PM10) and NOx] should regularly be submitted to the Ministry including its Regional Office, Bhubaneswar and the State Pollution Control Board/ Central Pollution Control Board once in six months.**

Compliance: Complied.

At present, the data on ambient air quality (RSPM, SO₂, NO_x & CO) is regularly submitted on six-monthly basis along with the compliance status reports.

After the installation of CAAQMS system, the data on ambient air quality (PM10, PM2.5, SO₂, NO_x & CO) is being automatically uploaded to OSPCB server. The AAQ monitoring reports for the compliance period are enclosed as **Annexure – II**.

- 17) **The top soil, if any shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation.**

Compliance: Complied.

No Topsoil is being generated during 2024-25.

- 18) **Measures should be taken for control of noise levels below 85dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provide with ear plugs/ muffs.**

Compliance: Complied.

Manganese mining operation inside this ML is carried out manually and hence the noise generation is within limits. However, critical areas responsible for noise generation beyond the norms is duly identified and accordingly, site-specific measures pertinent to the Noise generation source are provided to minimize the noise exposure levels. Some of the Noise control measures implemented by BOM are as follows:

1. To control unnecessary noise generation from the machineries, periodical maintenance of the equipment is carried out by the contractors.
2. All working personnel are provided with Noise Plugs as a part of standard PPE kit and Noise Isolation Earmuffs are provided to all personnel working near noise prone areas.
3. Further, to minimize the exposure of personnel deployed near Noise generating Sources, the personnel are rotated every Four hours.
4. Moreover, regular Noise level monitoring is carried out at the identified critical areas.

Additionally, regular Noise level monitoring is carried out at the identified critical areas.

- 19) **Industrial waste water (workshop and waste water from mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.**

Compliance: Complied.

The following actions are taken for compliance:

- a) There is no maintenance activity of Mining Machineries is carried out inside this ML area. The contractor does the maintenance activities at his own premises. Hence, Installation of ETP is not applicable.
- b) However, washing of all the light vehicles plying inside this ML and equipment's and equipment maintenance are carried out at designated workshops and washing bays inside 5.10 Sq. Mile ML, which are provided with ETPs (Oil and Grease catch traps) to collect and treat workshop effluent. Further, revamping of these ETPs has been undertaken. Installation of one number Mechanical ETP has been completed and installation of another one is under progress.
- c) The quality of the treated water conforms to the prescribed standards.

The consolidated Environmental Monitoring analysis report of Water is submitted herewith as **Annexure-VI.**

- 20) **A separate environmental management cell with suitable qualified personnel should be set up under the control of a Senior Executive, who will report directly to the Head of the Organization.**

Compliance: Complied.

Environment Management Section (EMS) works as a separate section under the Head of Environment & Lease section for both the ML areas of BOM under direct control of Chief General Manager (Mines). The details of constitution are as follows:

Composition of Environment Management section	Qualification
General Manager (Environment & Lease), Grade- E7	(1) MSc Tech Applied Geology (2) M Tech Environmental Sc. & Engineering
AGM (Min-E&L), Grade- E4	(1) B Tech Mining
Mining Foreman , Grade-S6	(1) Diploma (Mining)
Mining Mate , Grade-S2	(2) Graduate (Mining Mate) (3) PG Diploma in Environment & sustainable development

Necessary proposal is under process for recruitment of multidisciplinary qualified personnel's for induction into environmental management section.

- 21) **The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Bhubaneswar.**

Compliance: Complied.

1. Funds under Revenue budget is kept for jobs under repair and maintenance for jobs related to environmental protection measures in different operational areas.
2. Funds under Capex Budget (capital nature) is allotted on case to case basis for new addition - modification after following due process of AMR – Capex approval
3. Funds are not diverted for other purposes.
4. Year wise expenditure is being reported to Regional Office, Bhubaneswar in annual compliance reports.

- 22) **The Project authorities should inform to the Regional Office located at Bhubaneswar regarding date of financial closures and final approval of the project by concerned authorities and date of start of land development work.**

Compliance: Complied.

The lease is already operating. The ML deed was executed on 09/09/2021. Mining of Manganese ore was resumed from 1st April of 2023.

- 23) **Regional office of this Ministry located at Bhubaneswar shall monitor compliance of stipulated conditions. The project authorities should extend full co-operation to the officer(s) of the Regional Office by furnishing requisite date/ information/ monitoring reports.**

Compliance: Complied.

Bolani Ores Mines has always and will continue to fully cooperate with the inspecting authorities by providing necessary data, information, and monitoring reports, and carefully looking into areas for further improvement.

- 24) **The project proponent shall submit six monthly report on the status of the compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the Ministry of Environmental and Forests, its Regional Office, Bhubaneswar, the respective Zonal office of Central Pollution Control Board and the State Pollution Control Board. The proponent shall upload the status of compliance of the environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment and Forest, Bhubaneswar, the respective Zonal Officer of Central Pollution Control Board and the State Pollution Control Board.**

Compliance: Complied.

The compliance report is uploaded to the designated Parivesh portal.

1. Six-monthly compliance reports on the status of environmental safeguards are being submitted to MoEF&CC, New Delhi, the MoEF&CC Regional Office in Bhubaneswar, the Zonal office of the Central Pollution Control Board, and the State Pollution Control Board.
2. A copy of the compliance report, including Environmental Parameters Monitoring data, is uploaded to the SAIL website at www.sail.co.in.

- 25) **A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad/Municipal Corporation, Urban Local Body and the local NGO, if any, from whom suggestion/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.**

Compliance: Complied.

Copies of the clearance letter were shared with local bodies, from which valuable suggestions, representations, and feedback were received during the processing of the proposal.

- 26) **The 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.**

Compliance: Agreed to Comply.

The copy of the clearance letter was displayed at the State Pollution Control Board's Regional Office, the District Industry Centre, and the Collector's Office/Tehsildar's Office for a period of 30 days, as requested.

- 27) **The environmental statement for each financial year ending 31st march in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of the compliance of environmental clearance conditions and shall also be sent to the respective Regional Office of the Ministry of Environment and Forests, Bhubaneswar by e-mail.**

Compliance: Complied.

Environment Statement for 2024-25 of Bolani Ores Mines was submitted vide our letter no. CGM/B-1258, Dated:-27/09/2025. The environment statement is uploaded on the website of the SAIL along with the status of the compliance of environmental clearance conditions and is also sent to the respective Regional Office of the Ministry of Environment and Forests, Bhubaneswar is enclosed in **Annexure – V**

- 28) **The project authorities should advertise at least in two local newspapers of the District or State in which the project is located and 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 Boards and also at web site of the Ministry of Environment and Forests at <http://envfor.nic.in> and a copy of the same should be forwarded to the Regional Office of the this Ministry located Bhubaneswar.**

Compliance: Complied.

Advertisements regarding grant of environmental clearance was published in Odia daily SAMBADA, Bhubaneswar & Sambalpur Edition on date 27-12-2012 and Business Standard on date 27-12-2012.

- 29) The Ministry or any other competent authority may alter /modify the above conditions or stipulate any further condition in the interest of environment protection.

Compliance: Agreed to Comply.

The conditions will be complied, as and when stipulated.

- 30) Failure to comply with any of the condition mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

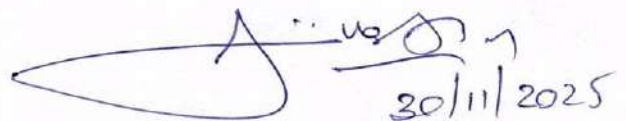
Compliance: Agreed to Comply.

- 31) The above condition will be enforced inter-alia, under the provisions of the Water (prevention & Control of Pollution) Act, 1974, the Air (prevention and control of pollution) Act, 1981, the Environment (protection) Act, 1986 and public liability Insurance Act, 1991 along with their amendments and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/High Court of Orissa and any other Court of Law relating to the subject matter.

Compliance: Agreed to Comply.

- 32) Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days, as prescribed under section-16 of the National Green Tribunal Act 2010.

Compliance: Agreed to Comply.



**Chief General Manager (Mines)
Bolani Ores Mines, CMLO, M/s SAIL**

ANNEXURE-I

**PHOTOGRAPHS SHOWING DIFFERENT AIR
POLLUTION CONTROL MEASURES
IMPLEMENTED**



Drill Machine with Wet Drilling Facility Deployed at F and G-Area

Drill Machine with Wet Drilling Facility Deployed at D and Panposh Area



28 KL Mobile Water Sprinkler Deployed at F and G Area Haul Road



Fixed Sprinkler Installed at Permanent Haul Road of FandG Area

Fixed Sprinkler Installed at Permanent Haul Road of D and Panposh Area



DFDS Installed at Feed Hopper of 1600 TPH Plant

Rotating Fog Canon Installed at SSP



Fixed Sprinkler Installed at Roads Around Loading Plant



Covering of Mineral Transporting Truck by Tarpaulin

Rotating Fog Canon Installed at Lump Loading Plant



Truck Mounted Mist Canon Deployed at Near Fines Stacker



Covered conveyors from Mines till dispatch point

Wheel Washing System Installed at Exit Gate of Fines Selling Area



Road Sweeper Machine Deployed at Bolani Township Area

9 KL Mobile Water Tanker Deployed at Office Area

ANNEXURE-II
**ENVIRONMENTAL PARAMETER
MONITORING REPORTS**

1.0 PREAMBLE

Steel Authority of India Limited (*hereinafter termed as SAIL*), is a central public sector undertaking under the ownership of Ministry of Steel, Govt. of India has engaged M/s Ecomen Mining Pvt. Ltd., Lucknow, U.P. for carrying out various **Environmental Monitoring and Analysis Work** in its Bolani Ores Mines –RSP located in the district of Keonjhar.

M/s Ecomen Mining Pvt. Ltd. has obtained MoEF & CC Recognition, NABL Accreditation and SPCB, Odisha empanelment for its laboratory division and also a NABET Accredited consultant to carry out EIA/EMP Report for various sectors like Mining, Mineral Beneficiation, Coal Washery, Thermal Power Plant, Metallurgical Industry and Infrastructure & Building Projects etc.

Work Order issued by Bolani Ores Mines-RSP-SAIL vide No-CC/REV/67/2025-26 dated.07.07.2025 for Environmental Monitoring & Analysis Work includes monitoring & analysis of Air Environment, Water Environment, Land Environment such as Ambient Air Quality, Work Zone Air Quality, Water Quality, Waste Water Quality, Vehicular Emission and Soil Quality. This report presents the Environmental monitoring data collected from the core and buffer zone of Bolani Ores Mines in respect of following Environmental attributes during '**July-2025**' in the given frequency. Further, in compliance of condition no 6 (vi) of the EC Grant order vide J/11015/418/2008-IA.II(M) dated. 21.12.2012 and condition no 7 A(iii) of EC Grant order vide J/11015/396/2008-IA.II(M) dated. 21.12.2012 the analysis of air quality monitoring data is done in this report with the objective to see the effectiveness of the mitigative measures already implemented.

Scope of the Work

The scope of work as per the work order for FY-2025-26 is as follows:

Table No. 1.1: Scope of Work

Sl. No.	Particulates	Frequency of monitoring	No. of Stations
1.	Sampling & Analyses for Ambient Air Quality(AAQ) for 5 Parameters i.e. PM 10, PM 2.5, SO ₂ ,NO _x & CO	Daily	04
2.	Sampling & Analyses for Ambient Air Quality (AAQ) for 2 Parameters i.e. PM 10, PM 2.5	Daily	02
3.	Sampling & Analyses of Fugitive dust/Emission (SPM & RSPM)	Daily	10
4.	Sampling & Analyses of Surface/ effluent/ drinking water Quality for 21 parameter	Monthly	08
5.	Sampling and Analyses of ground water quality for 21 parameters	Quarterly	03
6.	Sampling and Analyses of Soil Samples for specified 9 parameters	Yearly	06
7.	Monitoring of weather/meteorological Parameters and continuous generation of data daily round the year by	Daily	01

	establishing online station round the clock throughout the Year		
8.	Smoke Density Monitoring of Vehicular Exhaust	Annually	09
9.	Ground water level Monitoring	Quarterly	03
10.	Nallah/River Flow rate Monitoring	Monthly	03

2.0 DETAILS OF MONITORING/SAMPLING STATIONS:

To carry out the Environmental Data Generation program, ECOMEN in due consultation with SAIL has identified different locations to collect the samples for Air & Water Environment in and around the mining lease area. The details of stations identified are as follows. The details of locations identified for monitoring different environmental parameters are given in the subsequent sections.

2.1 Ambient Air Quality (A)

The prime objective of the ambient air quality study is to establish the existing ambient air quality in and around the mining lease area. The existing ambient air quality was monitored at six (6) locations. Out of six (06) locations, monitoring was carried out for Particulate Matter (PM₁₀), Particulate Matter (PM_{2.5}), Sulphur Dioxide (SO₂), Oxides of Nitrogen (NO_x) as (NO₂) and Carbon Monoxide (CO) at (4) Location and monitoring of Particulate Matter (PM₁₀) and Particulate Matter (PM_{2.5}) was carried out at the rest two (2) Locations as per the guidelines stipulated by Central Pollution Control Board. The locations are as given below.

Table No. 2.1: Details of AAQ Monitoring Stations

Sl. No.	Station Details	ML	Frequency	Station Code	GPS Coordinates	
					Latitude	Longitude
Ambient Air Quality (AAQ) for 5 Parameters i.e. PM ₁₀ , PM _{2.5} , SO ₂ ,NO _x & CO						
1	Bolani Village Community Center	6.90	Daily	A1	22°5'34.13"N	85°19'33.43"E
2	DAV Public School	6.90		A2	22°7'7.37"N	85°20'16.61"E
3	Main Gate	5.10		A3	22°6'18.18"N	85°19'47.27"E
4	Bolani Mines Office complex	5.10		A4	22°6'23.84"N	85°19'45.40"E
Ambient Air Quality (AAQ) for 2 Parameters i.e. PM ₁₀ , PM _{2.5}						
5	Limtur Village	6.90		A5	22°7'35.14"N	85°21'10.46"E
6	Karo Guest House	6.90		A6	22°05'36.38"N	85°20'32.38"E

2.2 Work Zone Air Quality/Fugitive Dust Emission Monitoring (F)

To assess the level of fugitive dust due to mining and allied activities, ten (10) monitoring stations were selected within the lease considering the activity area. Fugitive emissions monitoring was carried out on Daily Basis. The locations are as given below.

Table No. 2.2: Details of Fugitive Emission Monitoring Stations

Sl. No.	Station Details	ML	Frequency	Station Code	GPS Coordinates	
					Latitude	Longitude
1	Panposh	5.10	Daily	F1	22°6'41.46"N	85°19'41.60"E
2	D Area	5.10		F2	22°07'19.78"N	85°20'5.70"E
3	F Area	5.10		F3	22°05'45.19"N	85°18'21.95"E
4	G Area	5.10		F4	22°06'3.88"N	85°18'8.22"E
5	Lump Loading Point (near 600TPH)	6.90		F5	22°06'18.79"N	85°19'54.78"E
6	Fines Loading Plant	6.90		F6	22°05'51.12"N	85°19'45.79"E
7	Dump Fines handling route	6.90		F7	22°5'39.31"N	85°19'26.29"E
8	SSP	5.10		F8	22°06'13.80"N	85°19'12.52"E
9	Dump Fines Handling Site	5.10		F9	22°06'09.94"N	85°19'30.61"E
10	Mn Quarry	6.90		F10	22°07'23.56"N	85°21'8.86"E

2.3 Surface/Effluent/Drinking Water Quality:

In order to assess the quality of surface/effluent/drinking water, Eight (8) locations were identified in and around the ML area. Out of eight (8) locations, surface water was taken from four (4) locations, drinking water was taken from two (2) locations and effluent water was taken from two (2) locations. One grab sample was collected from each location in the month and was analyzed for 21 parameters as stipulated in the scope of work. The details of the locations are as follows:

Table No. 2.3: Details of Surface/Effluent/Drinking Water Quality Monitoring Stations

Station Details	Frequency	Station Code	GPS Coordinates	
			Latitude	Longitude
Surface Water Quality				
Panposh Nallah	Monthly Once	SWQ-1	22°6'31.68"N	85°19'34.41"E
Karo Near Lease Boundary		SWQ-2	22°7'26.27" N	85°21'52.95"E
Karo River Intake		SWQ-3	22°5.13.02' N	85°19'57.88"E

Jhikaria nallah before joining Karo		SWQ-4	22°5'22.50" N	85°19'10.05"E
Drinking Water Quality				
Mount Club Tap Water	Monthly Once	DW-1	22°6'56.24" N	85°19'58.21"E
Karo Guest House Tap Water		DW-2	22°5'36.68" N	85°20'32.09"E
Effluent Waste Water				
Oil Catch Pit Water Bottom Garage	Monthly Once	EW-1	22°6'27.11" N	85°19'37.62"E
Oil Catch pit water G-Area		EW-2	22°6'1.83"N	85°18'24.16"E

2.4 Ground Water Quality (GWQ)

In order to assess the quality of ground water, three (3) locations were identified in and around the mining lease area. One grab sample is collected from each location quarterly and analyzed for 21 parameters as stipulated in the scope of work. The details of the locations are as follows:

Table No. 2.4: Details of Ground Water Quality Monitoring Stations

Station Details	Frequency	Station Code	GPS Coordinates	
			Latitude	Longitude
Ground Water Quality				
Bolani Village-Well water	Quarterly	GWQ-1	22° 05′ 27.20″N	85° 19′27.13″E
Bolani Gouda Basti-Well water		GWQ-2	22° 05′40.97″N	85° 20′2.45″E
Balagoda Village-Well water		GWQ-3	22° 05′57.02″N	85° 20′27.41″E

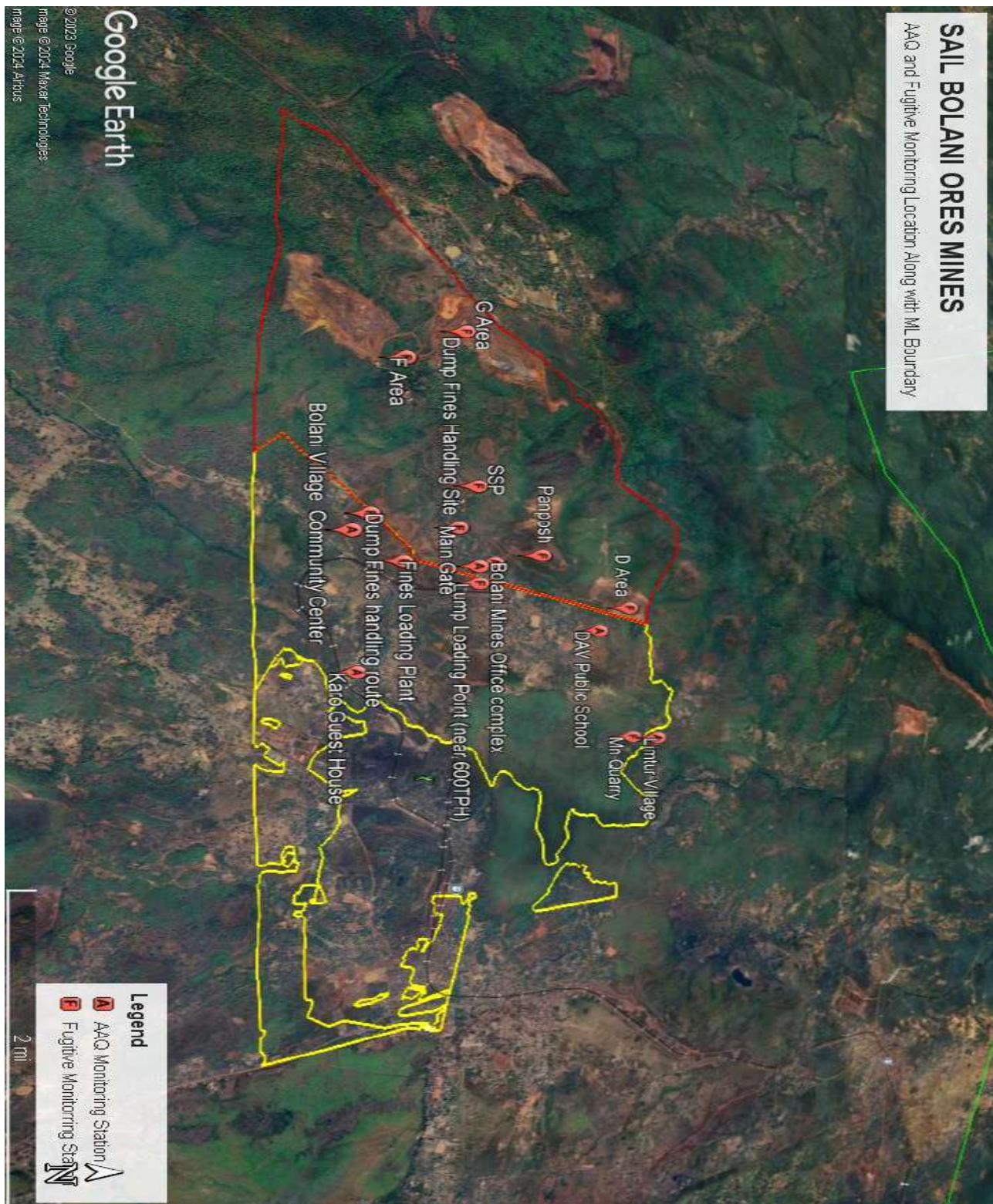
2.5 Weather/Meteorology

An Automatic Weather Monitoring Station (AWS) is installed at DAV Public School (22°7'7.85"N; 85°20'16.83"E) to collect the meteorological data on daily basis continuously. The parameters monitored at the meteorological station were Temperature, Relative Humidity, Wind Speed, Wind Direction and Rainfall. These parameters were recorded at weather monitoring station using the respective sensors.

Table No. 2.5: Details of Meteorological Monitoring Stations

Station Details	Frequency	Station Code	GPS Coordinates	
			Latitude	Longitude
DAV Public School	Daily Basis	M	22°7'7.85"N	85°20'16.83"E

Figure No.1: Location of Monitoring Station with ML Boundary



3.0 RESULTS AND DISCUSSION

3.1 Ambient Air Quality Monitoring

The Summarized results of AAQ for the month of July-2025 are given in the Table below

Table No. 3.1 (a): Summarized Results of Ambient Air Quality

Sl. No.	Location Name	Station Code	PM ₁₀			PM _{2.5}		
			Max.	Min.	Avg.	Max.	Min	Avg.
1.	Bolani Village Community center	A1	63.2	52.8	58.01	25.5	18.1	21.64
2.	Dav Public School	A2	60.8	49.1	55.48	24.7	17.3	21.19
3.	Main Gate	A3	67.8	59.6	64.14	26.9	20.0	23.69
4.	Bolani Mines Office Complex	A4	64.9	56.1	60.27	24.9	18.1	21.20
5.	Limtur Village	A5	63.90	55.60	59.76	23.40	15.0	18.74
6.	Karo Guest House	A6	62.90	55.60	59.72	24.00	15.0	19.51
CPCB Std.			100 µg/m ³			60 µg/m ³		

Table No. 3.1(b): Summarized Results of Ambient Air Quality

Sl. No.	Location Name	Station Code	SO ₂			NO _x		
			Max.	Min.	Avg.	Max.	Min	Avg.
1.	Bolani Village Community Center	A1	22.9	15.3	19.02	21.0	16.5	18.75
2.	Dav Public School	A2	21.9	14.1	17.94	20.0	15.4	17.84
3.	Main Gate	A3	24.5	17.2	20.63	22.8	18.2	20.55
4.	Bolani Mines Office Complex	A4	22.7	16.2	19.77	21.9	17.1	19.43
CPCB Std.			80 µg/m ³			80 µg/m ³		

BDL of SO₂ ≤ 4 µg/m³, BDL of NO_x ≤ 9 µg/m³ (No_x as No₂)

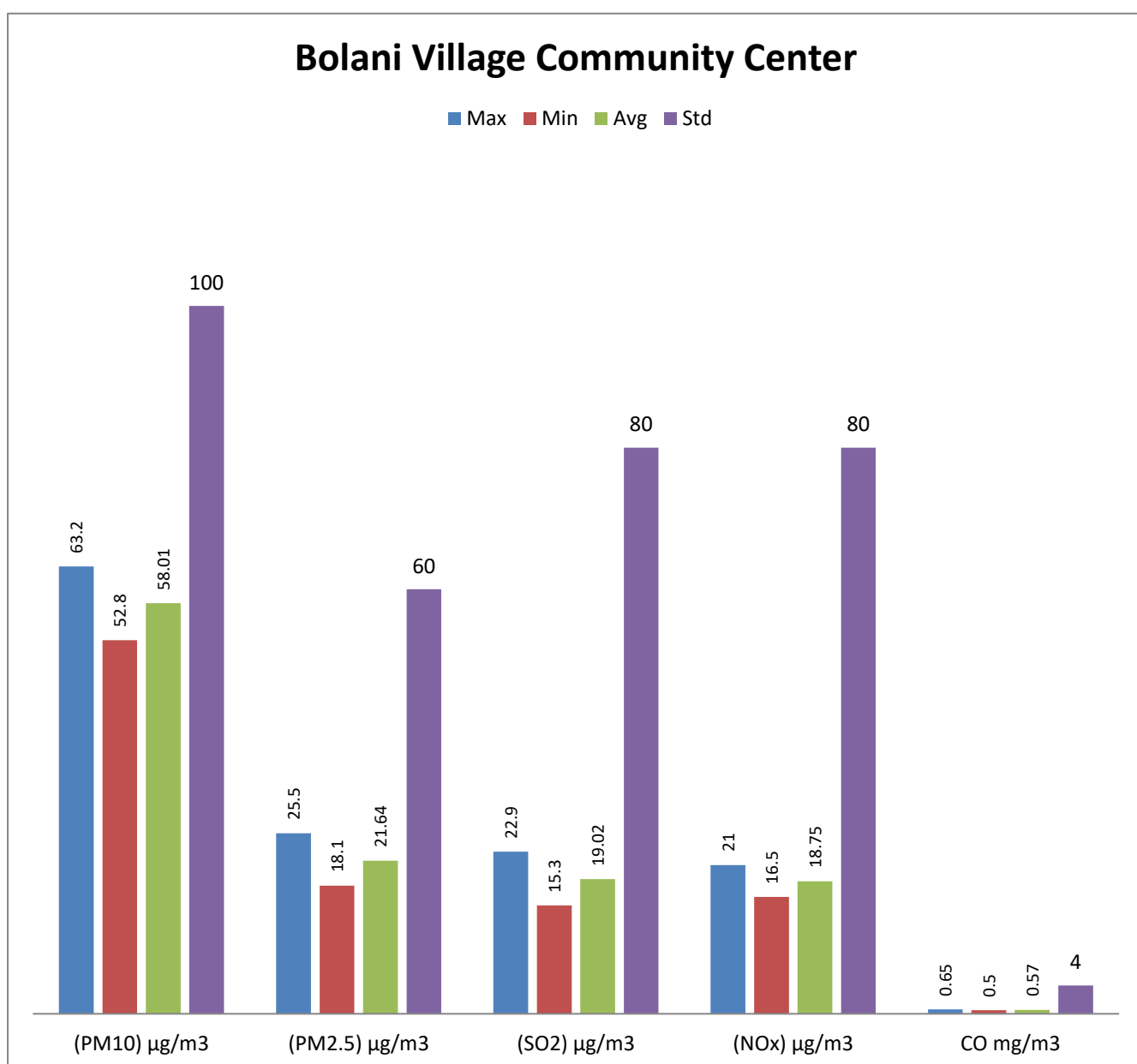
Table No. 3.1(c): Summarized Results of Ambient Air Quality

Sl. No.	Location Name	Station Code	CO		
			Max.	Min.	Avg.
1.	Bolani Village Community Center	A1	0.65	0.50	0.57
2.	Dav Public School	A2	0.58	0.49	0.54
3.	Main Gate	A3	0.61	0.52	0.56
4.	Bolani Mines Office Complex	A4	0.59	0.50	0.55
CPCB Std.			4 mg/m ³		

Note: BDL value for CO-0.11 mg/m³

3.1.1 Bolani village Community Center (A1):

The pollution level in Bolani village Community Center for the parameters PM₁₀, PM_{2.5}, SO₂, NO_x & CO is within the stipulated norms of CPCB. The maximum concentration of PM₁₀ was observed 63.2 µg/m³ whereas minimum concentration was observed 52.8 µg/m³ during the month. PM_{2.5} concentration ranges between 18.1 µg/m³ to 25.5 µg/m³, SO₂ concentration ranges between 15.3 µg/m³ to 22.9 µg/m³, NO_x as (NO₂) concentration ranges between 16.5 µg/m³ to 21.0 µg/m³ and CO concentration ranges between 0.50 mg/m³ to 0.65 mg/m³ was observed during the month



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/AAQ/150

Test Report Issue date: 02.08.2025

AMBIENT AIR QUALITY MONITORING REPORT FOR JULY 2025

- Name of Industry : Steel Authority of India limited,
Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha
- Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer (NDIR)
- Sampling Location : AAQMS-1: Bolani village Community Center
- Sample collected by : EMPL representative in presence of Client's representative.

Parameters		Particulate Matter (PM ₁₀) µg/m ³	Particulate Matter (PM _{2.5}) µg/m ³	Sulphur Di-oxide (SO ₂) µg/m ³	Nitrogen Oxides (NO _x) µg/m ³	Carbon mono-oxides as CO mg/m ³
PROTOCOL		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
Limits of Detection		10-1000	10-1000	5-200	5-200	0.1-100
Limit as per National Ambient Air Quality Standards		100	60	80	80	4
S. No.	Sampling Date	Results				
1.	01.07.2025	56.1	25.3	16.7	19.3	0.58
2.	02.07.2025	52.8	21.4	15.6	16.5	0.53
3.	03.07.2025	57.8	24.1	15.9	18.8	0.64
4.	04.07.2025	53.8	24.2	22.2	19.0	0.59
5.	05.07.2025	58.8	22.5	16.9	19.5	0.58
6.	06.07.2025	58.4	21.9	20.8	17.0	0.58
7.	07.07.2025	55.4	22.7	18.9	20.2	0.50
8.	08.07.2025	60.6	24.2	15.3	19.1	0.60
9.	09.07.2025	53.8	18.8	21.4	17.9	0.56
10.	10.07.2025	56.2	18.9	19.5	17.3	0.52
11.	11.07.2025	55.0	22.1	18.4	18.2	0.64
12.	12.07.2025	61.1	21.0	17.0	20.3	0.60
13.	13.07.2025	62.5	18.1	16.2	20.9	0.59
14.	14.07.2025	60.3	21.8	17.5	19.3	0.51
15.	15.07.2025	60.4	22.0	19.1	18.6	0.55
16.	16.07.2025	63.2	22.2	19.8	17.3	0.57
17.	17.07.2025	53.8	25.1	20.9	16.9	0.52
18.	18.07.2025	56.2	19.9	16.3	21.0	0.55
19.	19.07.2025	54.4	18.1	18.9	20.3	0.61
20.	20.07.2025	52.8	18.9	22.9	18.4	0.51
21.	21.07.2025	59.7	21.6	20.6	16.9	0.62
22.	22.07.2025	61.6	18.7	18.2	18.7	0.57
23.	23.07.2025	57.0	21.0	22.2	20.8	0.59
24.	24.07.2025	59.6	23.6	21.4	18.3	0.53
25.	25.07.2025	61.9	25.5	20.9	19.1	0.63
26.	26.07.2025	55.4	22.9	20.6	18.6	0.64
27.	27.07.2025	60.2	19.8	18.5	19.5	0.65
28.	28.07.2025	55.2	21.9	20.9	18.8	0.61
29.	29.07.2025	59.3	19.9	16.8	17.6	0.54
30.	30.07.2025	62.0	20.8	22.2	19.2	0.52
31.	31.07.2025	62.9	22.0	17.1	17.8	0.51
Average		58.0	21.6	19.0	18.7	0.57

Note- No_x is Given as NO₂

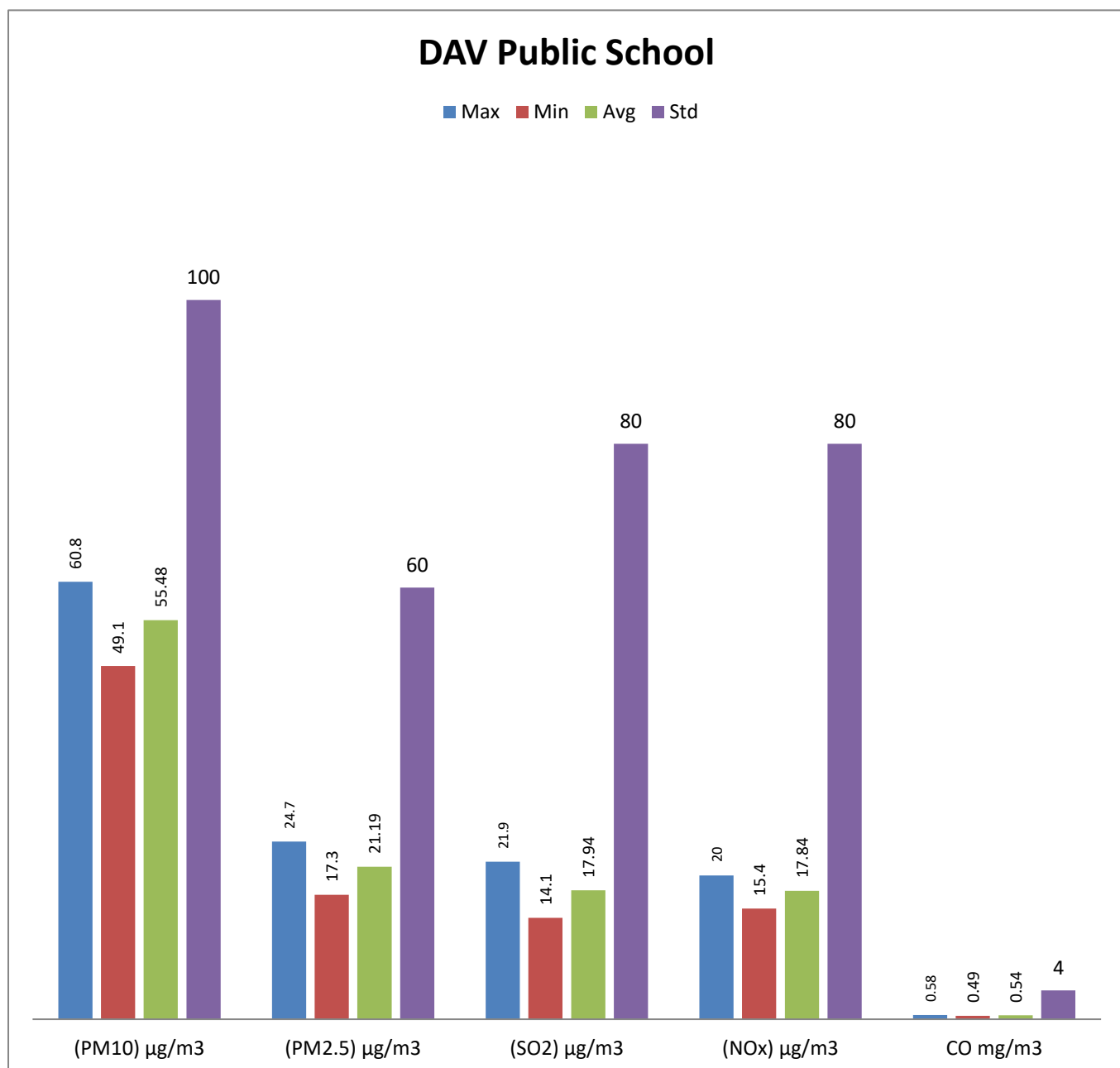
----End of Report----



Authorized By
[Signature]
Technical Manager
(Midhun G)

3.1.2 DAV Public School (A2):

The pollution level in DAV Public School for the parameters PM₁₀, PM_{2.5}, SO₂, NO_x & CO is within the stipulated norms of CPCB. The maximum concentration of PM₁₀ was observed 60.8 µg/m³ whereas minimum concentration was observed 49.1 µg/m³ during the month. PM_{2.5} concentration ranges between 17.3 µg/m³ to 24.7 µg/m³, SO₂ concentration ranges between 14.1 µg/m³ to 21.9 µg/m³, NO_x as (NO₂) concentration ranges between 15.4 µg/m³ to 20.0 µg/m³ and CO concentration ranges between 0.49 mg/m³ to 0.58 mg/m³ was observed during the month



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/AAQ/151

Test Report Issue date: 02.08.2025

AMBIENT AIR QUALITY MONITORING REPORT FOR JULY 2025

- Name of Industry : Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha
- Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer (NDIR)
- Sampling Location : AAQMS-2: DAV Public School
- Sample collected by : EMPL representative in presence of Client's representative.

Parameters		Particulate Matter (PM ₁₀) µg/m ³	Particulate Matter (PM _{2.5}) µg/m ³	Sulphur Di-oxide (SO ₂) µg/m ³	Nitrogen Oxides (NO _x) µg/m ³	Carbon mono-oxides as CO mg/m ³
PROTOCOL		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
Limits of Detection		10-1000	10-1000	5-200	5-200	0.1-100
Limit as per National Ambient Air Quality Standards		100	60	80	80	4
S. No.	Sampling Date	Results				
1.	01.07.2025	59.8	19.1	14.1	15.9	0.50
2.	02.07.2025	53.1	21.1	19.8	19.6	0.51
3.	03.07.2025	50.7	17.8	17.0	17.5	0.58
4.	04.07.2025	52.3	21.4	18.3	17.9	0.52
5.	05.07.2025	50.2	23.5	16.9	17.5	0.52
6.	06.07.2025	53.7	17.3	14.9	16.6	0.49
7.	07.07.2025	54.6	18.6	17.4	15.9	0.58
8.	08.07.2025	57.5	23.5	17.1	17.1	0.58
9.	09.07.2025	51.2	18.6	18.1	16.1	0.56
10.	10.07.2025	54.5	20.0	20.3	18.7	0.58
11.	11.07.2025	59.7	22.9	21.6	19.3	0.55
12.	12.07.2025	59.7	18.3	18.5	17.8	0.55
13.	13.07.2025	56.9	24.2	19.0	15.8	0.52
14.	14.07.2025	57.6	17.4	21.8	20.0	0.55
15.	15.07.2025	52.3	19.5	20.7	16.1	0.53
16.	16.07.2025	49.1	24.7	17.8	16.8	0.53
17.	17.07.2025	60.5	24.5	18.4	19.6	0.50
18.	18.07.2025	55.8	22.0	21.9	19.9	0.57
19.	19.07.2025	60.5	17.4	21.0	19.8	0.51
20.	20.07.2025	52.4	22.8	19.8	17.5	0.52
21.	21.07.2025	55.0	24.5	15.2	19.2	0.50
22.	22.07.2025	59.0	23.3	15.9	16.8	0.56
23.	23.07.2025	60.8	23.7	18.4	16.8	0.56
24.	24.07.2025	56.5	20.0	16.1	19.6	0.57
25.	25.07.2025	58.2	19.8	16.8	18.5	0.58
26.	26.07.2025	55.3	22.8	15.2	15.4	0.56
27.	27.07.2025	57.1	20.1	18.1	18.6	0.52
28.	28.07.2025	49.2	17.3	18.0	17.8	0.52
29.	29.07.2025	59.1	22.5	18.2	19.5	0.58
30.	30.07.2025	54.1	23.8	15.7	16.5	0.51
31.	31.07.2025	53.4	24.6	14.1	18.8	0.54
Average		55.5	21.2	17.9	17.8	0.54

Note- No_x is Given as No₂

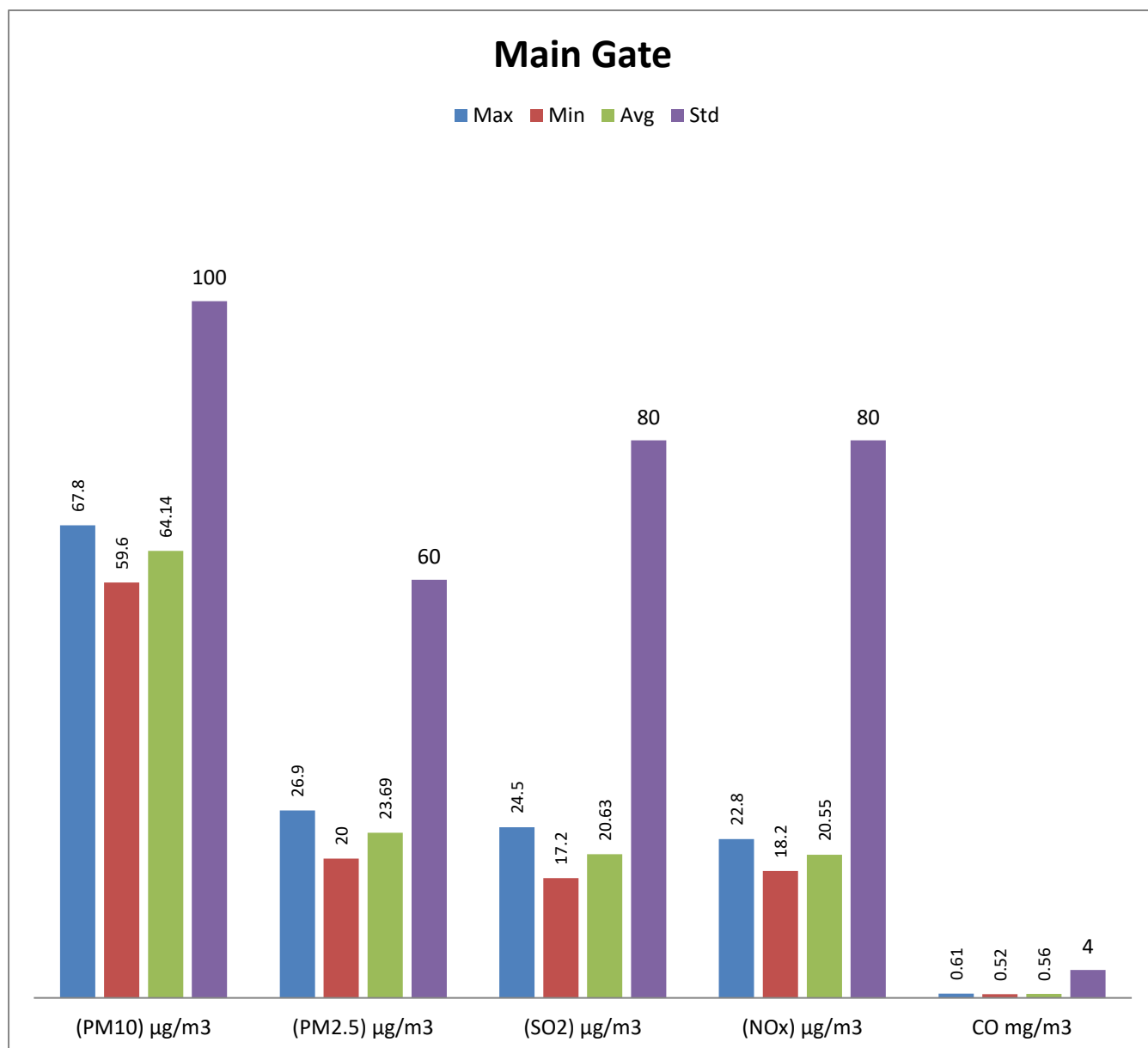
---End of Report---



Authorized By
[Signature]
Technical Manager
(Midhun G)

3.1.3 Main Gate (A3):

The pollution level in Main Gate for the parameters PM₁₀, PM_{2.5}, SO₂, NO_x & CO is within the stipulated norms of CPCB. The maximum concentration of PM₁₀ was observed **67.8** µg/m³ whereas minimum concentration was observed **59.6** µg/m³ during the month. PM_{2.5} concentration ranges between **20.0** µg/m³ to **26.9** µg/m³, SO₂ concentration ranges between **17.2** µg/m³ to **24.5** µg/m³, NO_x as (NO₂) concentration ranges between **18.2** µg/m³ to **22.8** µg/m³ and CO concentration ranges between **0.52** mg/m³ to **0.61** mg/m³ was observed during the month



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/AAQ/152

Test Report Issue date: 02.08.2025

AMBIENT AIR QUALITY MONITORING REPORT FOR JULY 2025

- Name of Industry : Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha
- Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer (NDIR)
- Sampling Location : AAQMS-3: Main Gate
- Sample collected by : EMPL representative in presence of Client's representative.

Parameters		Particulate Matter (PM ₁₀) µg/m ³	Particulate Matter (PM _{2.5}) µg/m ³	Sulphur Di-oxide (SO ₂) µg/m ³	Nitrogen Oxides (NO _x) µg/m ³	Carbon mono-oxides as CO mg/m ³
PROTOCOL		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
Limits of Detection		10-1000	10-1000	5-200	5-200	0.1-100
Limit as per National Ambient Air Quality Standards		100	60	80	80	4
S. No.	Sampling Date	Results				
1.	01.07.2025	63.7	20.8	18.1	18.2	0.53
2.	02.07.2025	61.8	26.5	21.3	19.9	0.52
3.	03.07.2025	59.9	25.7	18.9	22.8	0.59
4.	04.07.2025	67.0	25.3	20.8	18.8	0.55
5.	05.07.2025	61.1	24.0	24.1	22.8	0.55
6.	06.07.2025	67.8	24.9	19.3	19.2	0.61
7.	07.07.2025	67.7	26.9	22.4	20.3	0.56
8.	08.07.2025	63.5	21.8	18.4	22.8	0.59
9.	09.07.2025	59.6	21.5	17.7	21.5	0.53
10.	10.07.2025	65.7	25.8	21.8	22.5	0.54
11.	11.07.2025	66.1	21.1	20.9	20.8	0.57
12.	12.07.2025	67.4	26.6	21.0	19.9	0.58
13.	13.07.2025	60.3	24.7	19.0	20.3	0.52
14.	14.07.2025	65.8	26.6	17.2	20.2	0.61
15.	15.07.2025	65.3	24.3	23.2	19.8	0.57
16.	16.07.2025	61.4	20.1	23.5	19.3	0.54
17.	17.07.2025	61.8	25.9	21.1	18.6	0.56
18.	18.07.2025	65.2	21.7	18.5	22.0	0.59
19.	19.07.2025	61.4	22.2	23.4	18.2	0.54
20.	20.07.2025	66.2	20.8	22.7	22.7	0.56
21.	21.07.2025	60.1	24.3	19.7	21.8	0.56
22.	22.07.2025	61.3	23.1	23.1	22.5	0.53
23.	23.07.2025	67.8	20.0	20.6	22.1	0.58
24.	24.07.2025	65.0	23.1	24.5	20.7	0.57
25.	25.07.2025	66.0	25.9	17.8	18.9	0.61
26.	26.07.2025	64.4	20.8	24.5	18.6	0.61
27.	27.07.2025	63.9	26.4	18.6	21.8	0.54
28.	28.07.2025	67.4	22.0	19.3	20.3	0.55
29.	29.07.2025	63.7	21.9	20.0	18.7	0.53
30.	30.07.2025	64.3	23.0	18.7	21.5	0.56
31.	31.07.2025	65.6	26.6	19.4	19.7	0.55
Average		64.1	23.7	20.6	20.6	0.56

Note- NO_x is Given as NO₂

---End of Report---

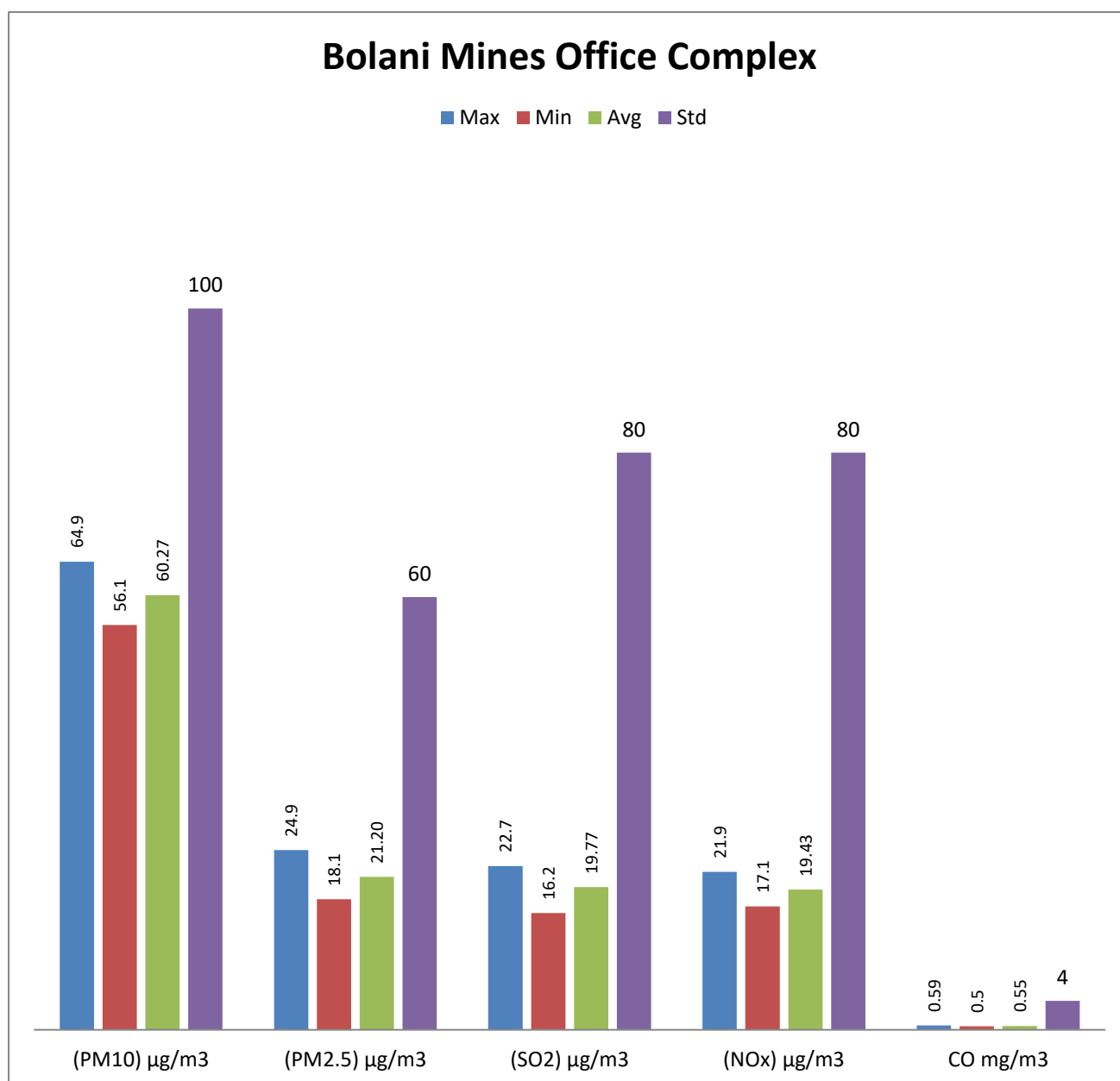


Authorized By

 Technical Manager
 (Midhun G)

3.1.4 Bolani Mines Office Complex (A4):

The pollution level in Bolani Mines Office Complex for the parameters PM₁₀, PM_{2.5}, SO₂, NO_x & CO is within the stipulated norms of CPCB. The maximum concentration of PM₁₀ was observed **64.9** µg/m³ whereas minimum concentration was observed **56.1** µg/m³ during the month. PM_{2.5} concentration ranges between **18.1** µg/m³ to **24.9** µg/m³, SO₂ concentration ranges between **16.2** µg/m³ to **22.7** µg/m³, NO_x as (NO₂) concentration ranges between **17.1** µg/m³ to **21.9** µg/m³ and CO concentration ranges between **0.50** mg/m³ to **0.59** mg/m³ was observed during the month



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/AAQ/153

Test Report Issue date: 02.08.2025

AMBIENT AIR QUALITY MONITORING REPORT FOR JULY 2025

- Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
- Monitoring Instruments : **RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer (NDIR)**
- Sampling Location : **AAQMS-4: Bolani Mines Office Complex**
- Sample collected by : **EMPL representative in presence of Client's representative.**

Parameters		Particulate Matter (PM ₁₀) µg/m ³	Particulate Matter (PM _{2.5}) µg/m ³	Sulphur Di-oxide (SO ₂) µg/m ³	Nitrogen Oxides (NO _x) µg/m ³	Carbon mono-oxides as CO mg/m ³
PROTOCOL		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
Limits of Detection		10-1000	10-1000	5-200	5-200	0.1-100
Limit as per National Ambient Air Quality Standards		100	60	80	80	4
S. No.	Sampling Date	Results				
1.	01.07.2025	64.9	20.4	22.4	19.9	0.52
2.	02.07.2025	59.4	18.1	20.1	17.4	0.55
3.	03.07.2025	60.8	19.0	21.0	17.8	0.52
4.	04.07.2025	63.2	23.9	21.9	20.0	0.55
5.	05.07.2025	63.6	18.1	17.6	21.3	0.54
6.	06.07.2025	58.3	24.7	22.7	18.9	0.55
7.	07.07.2025	60.2	24.9	19.2	17.5	0.59
8.	08.07.2025	63.1	22.2	19.5	21.2	0.55
9.	09.07.2025	56.1	19.4	19.8	17.7	0.53
10.	10.07.2025	64.1	22.9	21.8	19.7	0.55
11.	11.07.2025	58.3	21.7	19.5	20.5	0.55
12.	12.07.2025	59.6	21.0	21.6	20.7	0.56
13.	13.07.2025	57.6	20.5	21.4	19.4	0.57
14.	14.07.2025	57.0	21.4	19.9	20.4	0.56
15.	15.07.2025	56.8	21.4	21.2	18.0	0.57
16.	16.07.2025	62.2	22.9	17.1	19.5	0.52
17.	17.07.2025	59.4	19.2	17.9	17.4	0.59
18.	18.07.2025	60.9	24.4	21.2	17.3	0.56
19.	19.07.2025	61.1	22.5	16.2	19.4	0.52
20.	20.07.2025	60.6	19.9	22.0	17.1	0.52
21.	21.07.2025	57.6	19.5	18.8	20.7	0.52
22.	22.07.2025	63.7	20.2	19.1	17.2	0.59
23.	23.07.2025	62.3	23.4	18.5	20.4	0.53
24.	24.07.2025	58.7	21.5	18.6	21.1	0.55
25.	25.07.2025	60.0	19.9	20.9	19.6	0.52
26.	26.07.2025	57.5	20.9	21.6	21.6	0.53
27.	27.07.2025	62.4	21.8	17.5	21.9	0.52
28.	28.07.2025	56.6	18.1	18.0	21.6	0.50
29.	29.07.2025	61.2	20.8	16.5	17.2	0.56
30.	30.07.2025	64.6	21.2	18.6	18.4	0.58
31.	31.07.2025	56.5	21.3	20.7	21.4	0.54
Average		60.3	21.2	19.8	19.4	0.54

Note- No_x is Given as No₂

----End of Report----

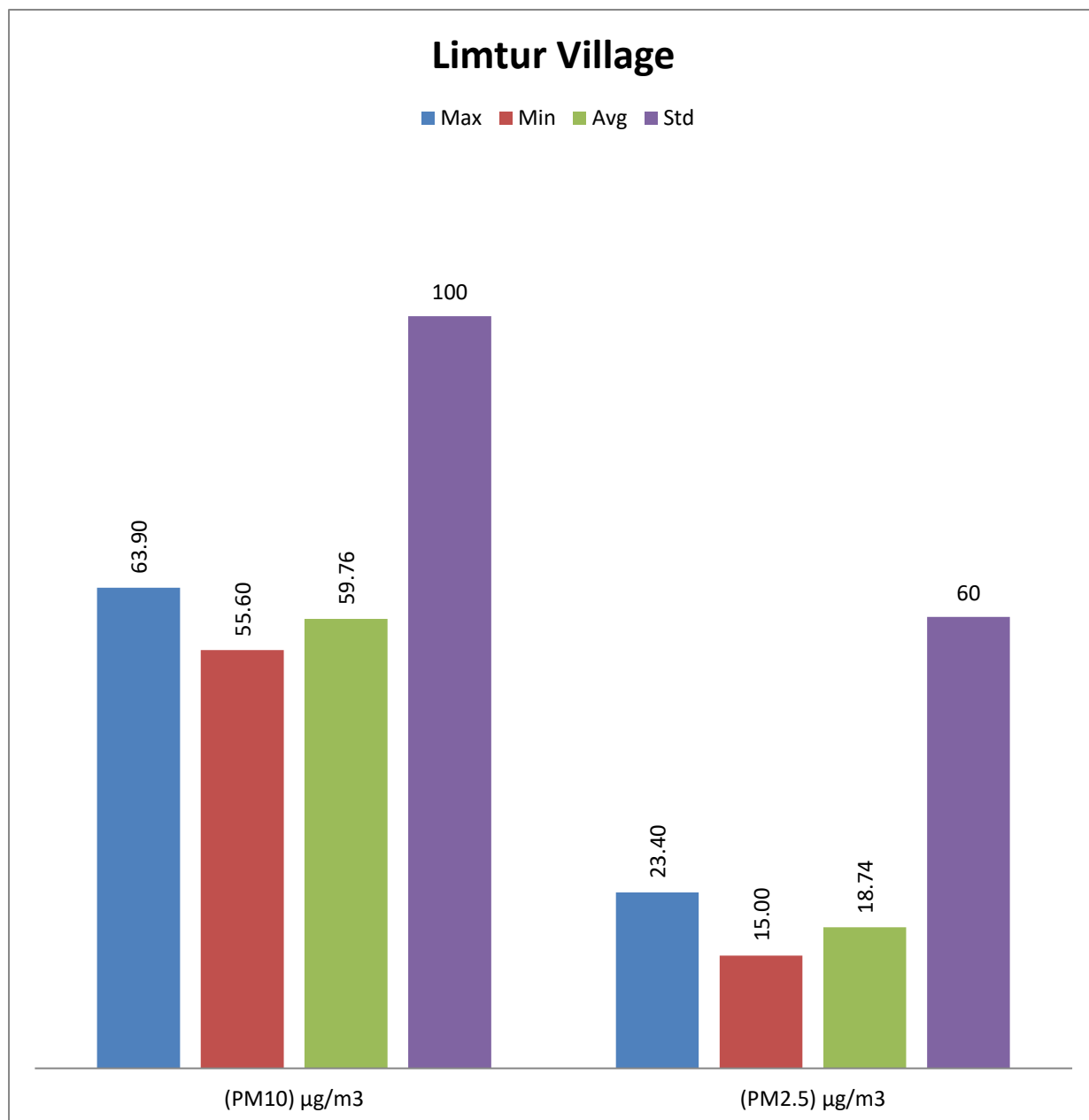


Authorized By

Technical Manager
(Midhun G)

3.1.5 Limtur Village (A5):

The pollution level in Limtur Village for the parameters PM_{10} and $PM_{2.5}$ is within the stipulated norms of CPCB. The maximum concentration of PM_{10} was observed $63.9 \mu\text{g}/\text{m}^3$ whereas minimum concentration was observed $55.6 \mu\text{g}/\text{m}^3$ and $PM_{2.5}$ concentration ranges between $15.0 \mu\text{g}/\text{m}^3$ to $23.4 \mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/AAQ/154

Test Report Issue date: 02.08.2025


AMBIENT AIR QUALITY MONITORING REPORT FOR JULY 2025

- Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
- Monitoring Instruments : **RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer (NDIR)**
- Sampling Location : **AAQMS-5: Limtur Village**
- Sample collected by : **EMPL representative in presence of Client's representative.**

Parameters		Particulate Matter (PM ₁₀) µg/m ³	Particulate Matter (PM _{2.5}) µg/m ³
PROTOCOL		IS:5182(Part-23)	IS:5182(Part-24)
Limits of Detection		10-1000	10-1000
Limit as per National Ambient Air Quality Standards		100	60
S. No.	Sampling Date	Result	
1.	01.07.2025	62.7	22.4
2.	02.07.2025	62.4	22.5
3.	03.07.2025	56.6	17.3
4.	04.07.2025	56.6	21.6
5.	05.07.2025	55.6	15.9
6.	06.07.2025	62.7	16.4
7.	07.07.2025	56.5	17.8
8.	08.07.2025	60.3	16.1
9.	09.07.2025	58.4	20.0
10.	10.07.2025	60.4	19.8
11.	11.07.2025	62.8	16.4
12.	12.07.2025	58.6	21.4
13.	13.07.2025	61.4	22.8
14.	14.07.2025	61.8	23.4
15.	15.07.2025	63.9	19.0
16.	16.07.2025	59.6	15.3
17.	17.07.2025	60.1	19.5
18.	18.07.2025	58.0	15.0
19.	19.07.2025	63.8	15.0
20.	20.07.2025	56.4	19.8
21.	21.07.2025	62.2	15.7
22.	22.07.2025	58.6	15.6
23.	23.07.2025	56.5	19.1
24.	24.07.2025	60.5	21.9
25.	25.07.2025	62.7	20.2
26.	26.07.2025	63.4	17.9
27.	27.07.2025	56.2	15.9
28.	28.07.2025	61.7	20.8
29.	29.07.2025	55.9	18.9
30.	30.07.2025	57.7	21.5
31.	31.07.2025	58.7	15.9
Average		59.8	18.7

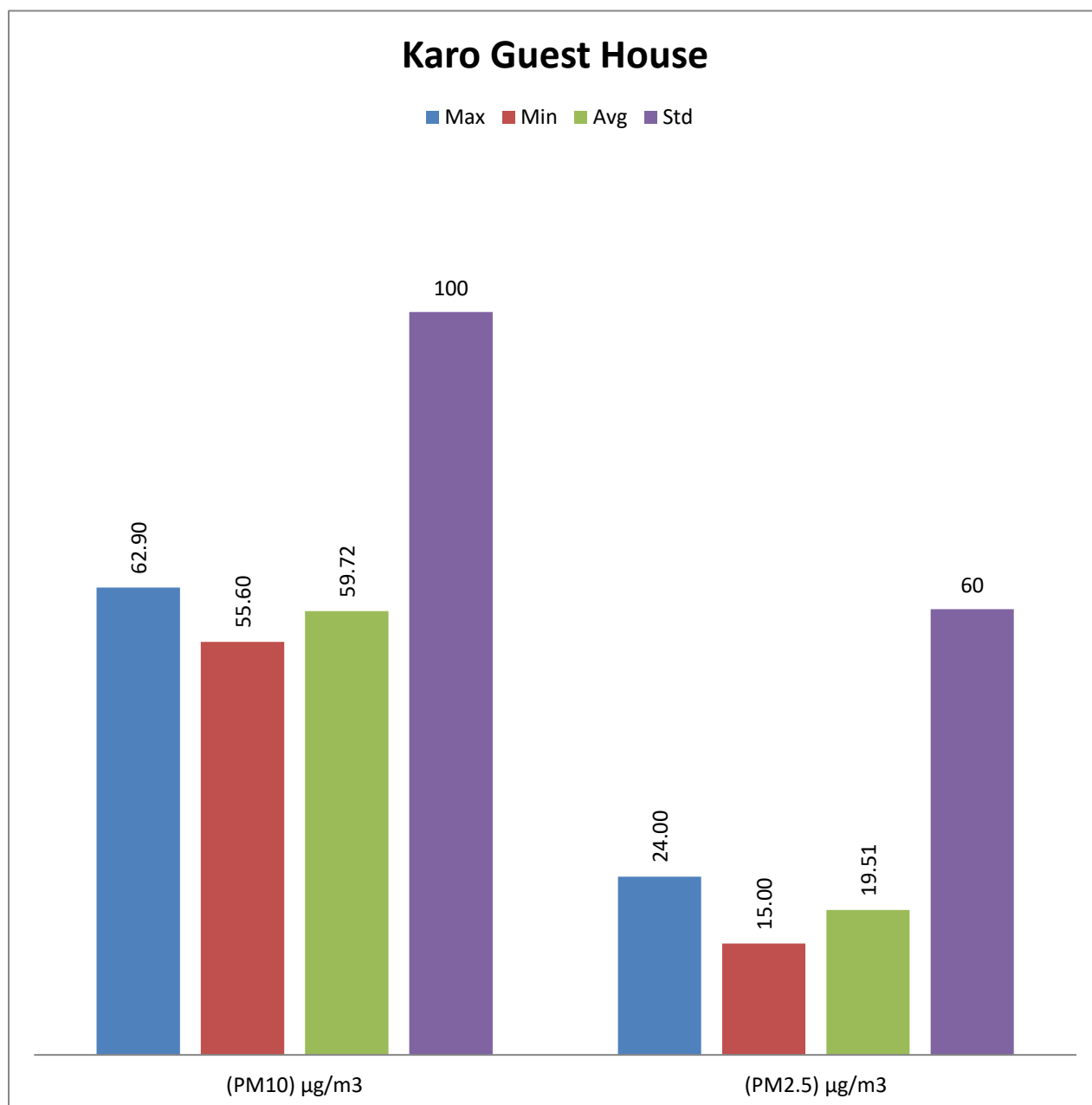
-----End of Report-----



Authorized By

 Technical Manager
 (Midhun G)

3.1.6 Karo Guest House (A6):

The pollution level in Karo Guest House for the parameters PM_{10} and $PM_{2.5}$ is within the stipulated norms of CPCB. The maximum concentration of PM_{10} was observed $62.9 \mu\text{g}/\text{m}^3$ whereas minimum concentration was observed $55.6 \mu\text{g}/\text{m}^3$ and $PM_{2.5}$ concentration ranges between $15.0 \mu\text{g}/\text{m}^3$ to $24.0 \mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/AAQ/155

Test Report Issue date: 02.08.2025

AMBIENT AIR QUALITY MONITORING REPORT FOR JULY 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer (NDIR)**
3. Sampling Location : **AAQMS-6: Karo Guest House**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Parameters		Particulate Matter (PM ₁₀) µg/m ³	Particulate Matter (PM _{2.5}) µg/m ³
PROTOCOL		IS:5182(Part-23)	IS:5182(Part-24)
Limits of Detection		10-1000	10-1000
Limit as per National Ambient Air Quality Standards		100	60
S. No.	Sampling Date	Result	
1.	01.07.2025	55.7	21.2
2.	02.07.2025	62.9	17.4
3.	03.07.2025	60.3	17.1
4.	04.07.2025	60.7	22.0
5.	05.07.2025	61.2	17.8
6.	06.07.2025	62.7	21.2
7.	07.07.2025	58.8	24.0
8.	08.07.2025	56.0	17.7
9.	09.07.2025	59.2	15.7
10.	10.07.2025	58.6	24.0
11.	11.07.2025	62.0	19.6
12.	12.07.2025	62.3	19.5
13.	13.07.2025	59.4	20.9
14.	14.07.2025	57.4	19.9
15.	15.07.2025	55.6	24.0
16.	16.07.2025	59.7	19.4
17.	17.07.2025	62.2	23.2
18.	18.07.2025	60.5	15.3
19.	19.07.2025	60.1	18.1
20.	20.07.2025	57.8	23.3
21.	21.07.2025	60.8	22.9
22.	22.07.2025	58.3	19.2
23.	23.07.2025	59.8	16.1
24.	24.07.2025	58.1	15.9
25.	25.07.2025	61.6	15.0
26.	26.07.2025	56.3	19.0
27.	27.07.2025	57.7	15.5
28.	28.07.2025	58.5	19.8
29.	29.07.2025	62.7	20.8
30.	30.07.2025	62.5	23.1
31.	31.07.2025	61.9	16.2
Average		59.7	19.5

---End of Report---

Authorized By

 Technical Manager
 (Midhun G)

3.2 Work Zone Air Quality/Fugitive Dust Emission Monitoring:

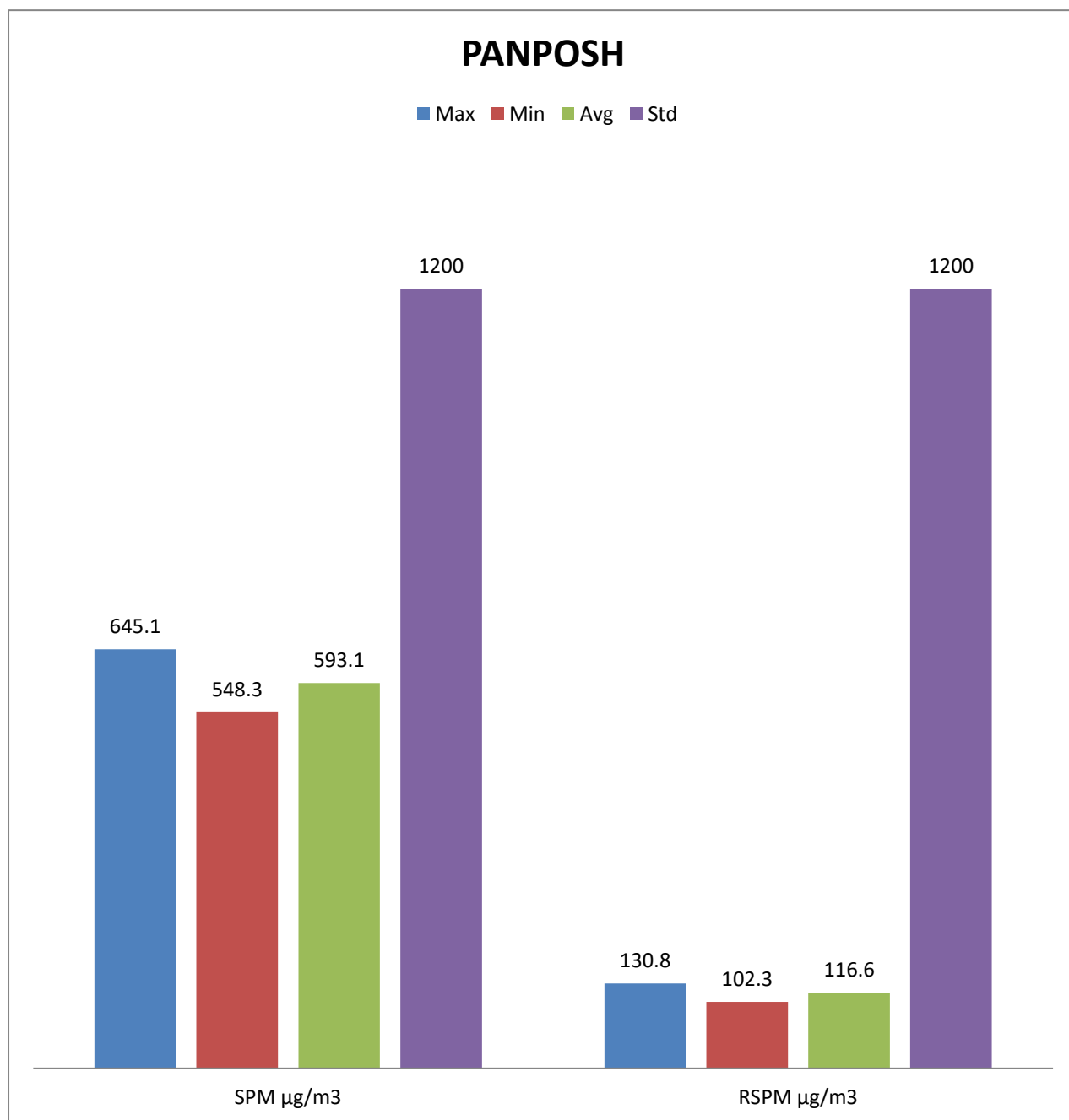
The Summarized results of Work Zone Air Quality/Fugitive Dust Emission for the month of July-2025 are given in the Table below

Table No. 3.2: Summarized Results of Work Zone Air Quality/Fugitive Dust Emission

Sl. No.	Location Name	Station Code	SPM $\mu\text{g}/\text{m}^3$			RSPM $\mu\text{g}/\text{m}^3$		
			Max.	Min.	Avg.	Max.	Min	Avg.
1.	Panposh	F1	645.1	548.3	593.1	130.8	102.3	116.6
2.	D Area	F2	634.8	548.6	594.1	131.7	100.0	115.3
3.	F Area	F3	624.6	540.1	587.4	128.3	102.7	113.6
4.	G Area	F4	627.4	545.8	579.9	127.4	100.6	111.2
5.	Lump Loading Point (near 600TPH)	F5	619.4	531.4	570.3	126.5	98.6	112.6
6.	Fines Loading (20 Area)	F6	646.8	562.1	608.4	132.3	101.8	117.4
7.	Dump Fines handling route	F7	613.6	527.2	565.5	125.0	96.8	108.7
8.	SSP	F8	614.7	535.0	567.5	128.2	100.1	111.7
9.	Dump Fines Handling Site	F9	621.5	541.5	577.5	128.6	98.6	111.9
10.	Mn Quarry	F10	635.1	540.2	580.1	132.4	98.2	112.5
As Per CTO Std.			1200 $\mu\text{g}/\text{m}^3$					

3.2.1 Panposh (F1):

The pollution level in Panposh Quarry for the parameters SPM_{and} RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **645.1** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **548.3** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **102.3** $\mu\text{g}/\text{m}^3$ to **130.8** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/150

Test Report Issue date: 02.08.2025

FUGITIVE EMISSION MONITORING REPORT FOR JULY 2025

1. Name of Industry : Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha
2. Monitoring Instruments : RDS (APM 460 BL)
3. Sampling Location : Panposh
4. Sample collected by : EMPL representative in presence of Client's representative.

Sl. No.	Date	Sampling Location	Parameter	
			SPM $\mu\text{g}/\text{m}^3$	RSPM $\mu\text{g}/\text{m}^3$
1.	01-07-2025	Panposh	555.3	114.3
2.	02-07-2025	Panposh	548.8	105.5
3.	03-07-2025	Panposh	623.6	130.8
4.	04-07-2025	Panposh	557.9	116.5
5.	05-07-2025	Panposh	641.3	126.3
6.	06-07-2025	Panposh	552.9	114.2
7.	07-07-2025	Panposh	560.6	112.6
8.	08-07-2025	Panposh	582.1	107.7
9.	09-07-2025	Panposh	615.2	128.0
10.	10-07-2025	Panposh	585.5	109.1
11.	11-07-2025	Panposh	551.1	103.4
12.	12-07-2025	Panposh	625.9	125.4
13.	13-07-2025	Panposh	621.4	130.0
14.	14-07-2025	Panposh	645.1	130.7
15.	15-07-2025	Panposh	637.3	130.0
16.	16-07-2025	Panposh	564.4	102.3
17.	17-07-2025	Panposh	556.3	102.3
18.	18-07-2025	Panposh	599.9	121.7
19.	19-07-2025	Panposh	623.8	117.6
20.	20-07-2025	Panposh	621.3	117.7
21.	21-07-2025	Panposh	548.3	104.7
22.	22-07-2025	Panposh	612.1	119.3
23.	23-07-2025	Panposh	597.1	119.8
24.	24-07-2025	Panposh	608.2	117.5
25.	25-07-2025	Panposh	576.4	107.3
26.	26-07-2025	Panposh	615.4	128.5
27.	27-07-2025	Panposh	569.3	110.4
28.	28-07-2025	Panposh	618.1	119.3
29.	29-07-2025	Panposh	618.6	114.8
30.	30-07-2025	Panposh	569.9	108.4
31.	31-07-2025	Panposh	582.0	119.8
Average			593.1	116.6

---End of Report---

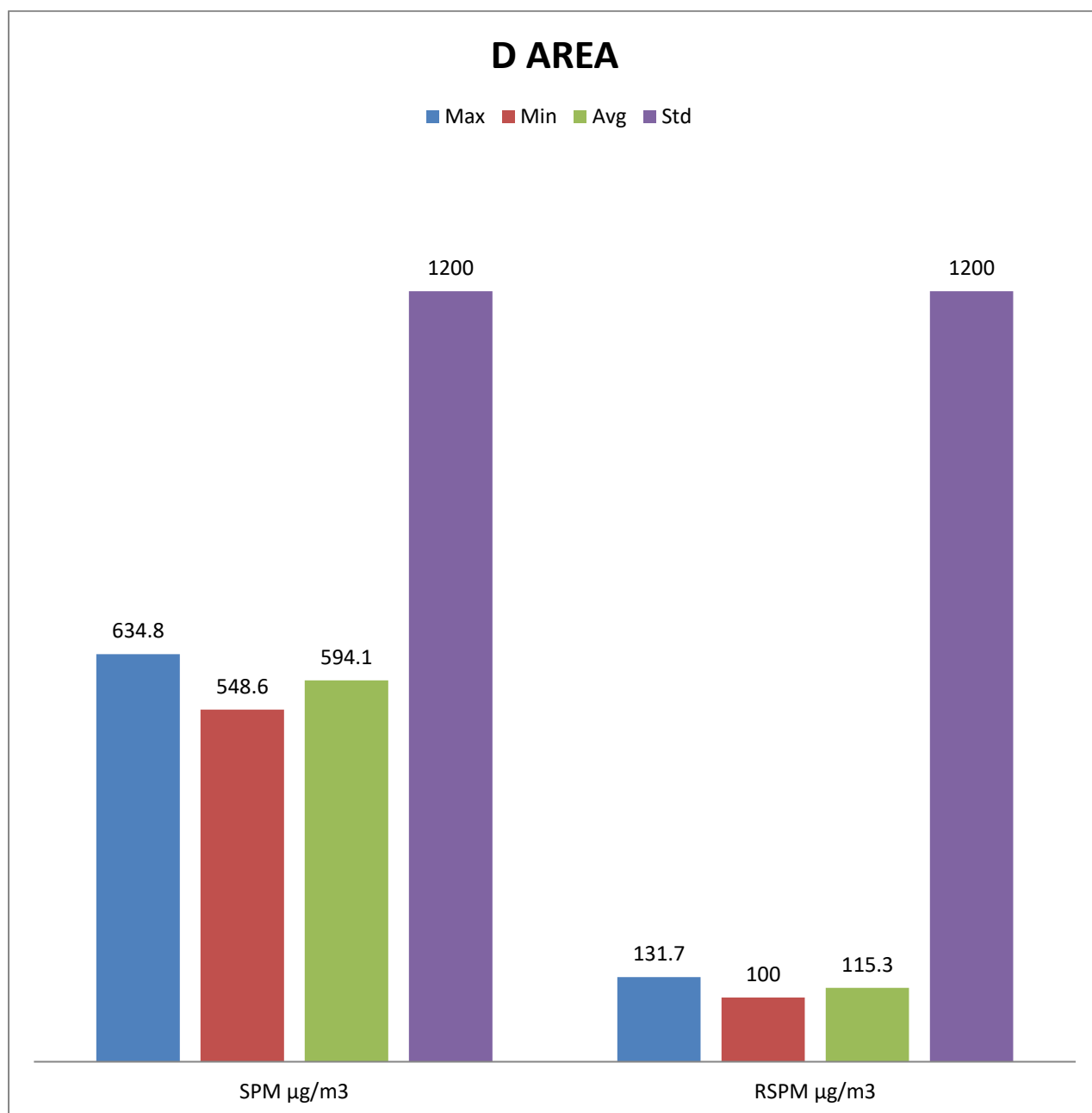


Authorized By

 Technical Manager
 (Midhun G)

3.2.2 D Area(F2)

The pollution level in D Area Quarry for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **634.8** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **548.6** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **100.0** $\mu\text{g}/\text{m}^3$ to **131.7** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/151

Test Report Issue date: 02.05.2025

FUGITIVE EMISSION MONITORING REPORT FOR JULY 2025

1. Name of Industry : Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha
2. Monitoring Instruments : RDS (APM 460 BL)
3. Sampling Location : D Area
4. Sample collected by : EMPL representative in presence of Client's representative.

Sl. No.	Date	Sampling Location	Parameter	
			SPM $\mu\text{g}/\text{m}^3$	RSPM $\mu\text{g}/\text{m}^3$
1.	01-07-2025	D Area	594.3	115.4
2.	02-07-2025	D Area	606.1	121.1
3.	03-07-2025	D Area	623.3	128.3
4.	04-07-2025	D Area	550.3	100.0
5.	05-07-2025	D Area	611.4	126.9
6.	06-07-2025	D Area	554.5	109.6
7.	07-07-2025	D Area	634.7	123.7
8.	08-07-2025	D Area	555.0	101.0
9.	09-07-2025	D Area	587.5	118.9
10.	10-07-2025	D Area	612.0	113.3
11.	11-07-2025	D Area	576.8	104.5
12.	12-07-2025	D Area	616.9	123.6
13.	13-07-2025	D Area	550.6	105.0
14.	14-07-2025	D Area	591.2	109.1
15.	15-07-2025	D Area	560.5	105.6
16.	16-07-2025	D Area	629.7	131.7
17.	17-07-2025	D Area	548.6	108.3
18.	18-07-2025	D Area	599.6	117.7
19.	19-07-2025	D Area	634.8	128.5
20.	20-07-2025	D Area	607.7	122.4
21.	21-07-2025	D Area	631.0	125.6
22.	22-07-2025	D Area	585.7	108.7
23.	23-07-2025	D Area	558.1	113.6
24.	24-07-2025	D Area	586.3	110.5
25.	25-07-2025	D Area	623.8	116.0
26.	26-07-2025	D Area	612.6	118.5
27.	27-07-2025	D Area	575.1	106.0
28.	28-07-2025	D Area	612.2	119.4
29.	29-07-2025	D Area	593.2	108.3
30.	30-07-2025	D Area	584.5	111.5
31.	31-07-2025	D Area	608.4	120.4
Average			594.1	115.3

----End of Report----

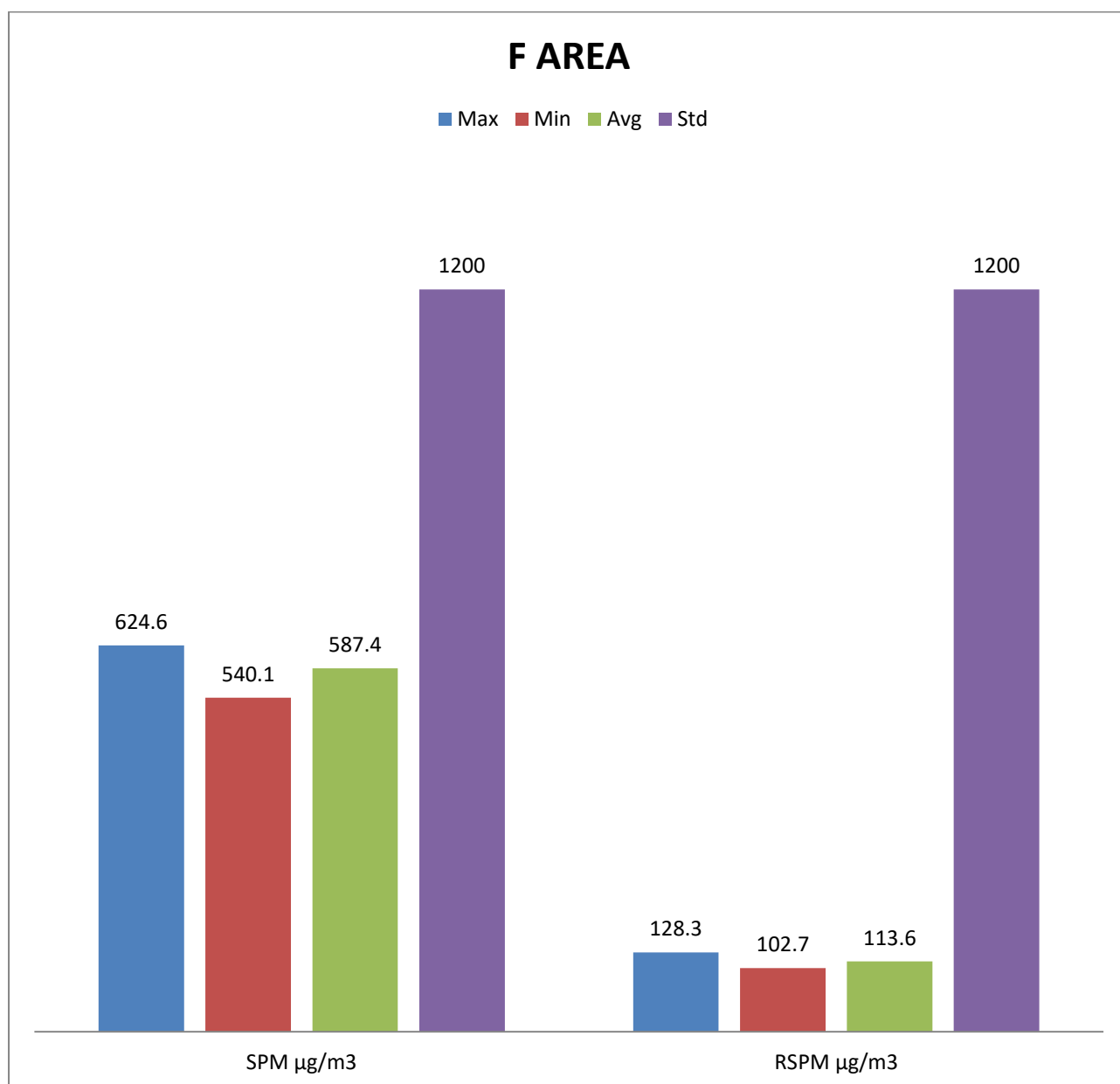


Authorized By

 Technical Manager
 (Midhun G)

3.2.3 F Area(F3)

The pollution level in F Area Quarry for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **624.6** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **540.1** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **102.7** $\mu\text{g}/\text{m}^3$ to **128.3** $\mu\text{g}/\text{m}^3$ during the month



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/152

Test Report Issue date: 02.08.2025

FUGITIVE EMISSION MONITORING REPORT FOR JULY 2025

1. Name of Industry : Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha
2. Monitoring Instruments : RDS (APM 460 BL)
3. Sampling Location : F Area
4. Sample collected by : EMPL representative in presence of Client's representative.

Sl. No.	Date	Sampling Location	Parameter	
			SPM $\mu\text{g}/\text{m}^3$	RSPM $\mu\text{g}/\text{m}^3$
1.	01-07-2025	F Area	587.2	119.1
2.	02-07-2025	F Area	617.1	128.3
3.	03-07-2025	F Area	605.6	122.8
4.	04-07-2025	F Area	618.4	116.9
5.	05-07-2025	F Area	552.0	112.9
6.	06-07-2025	F Area	555.1	111.3
7.	07-07-2025	F Area	568.4	107.2
8.	08-07-2025	F Area	581.5	106.0
9.	09-07-2025	F Area	572.3	116.2
10.	10-07-2025	F Area	612.6	111.5
11.	11-07-2025	F Area	568.7	107.7
12.	12-07-2025	F Area	608.2	111.2
13.	13-07-2025	F Area	622.4	117.2
14.	14-07-2025	F Area	615.7	119.4
15.	15-07-2025	F Area	619.5	127.5
16.	16-07-2025	F Area	579.3	117.1
17.	17-07-2025	F Area	577.3	115.6
18.	18-07-2025	F Area	554.7	113.3
19.	19-07-2025	F Area	606.8	113.0
20.	20-07-2025	F Area	553.0	107.1
21.	21-07-2025	F Area	624.6	118.4
22.	22-07-2025	F Area	572.8	103.4
23.	23-07-2025	F Area	622.4	117.5
24.	24-07-2025	F Area	571.5	103.6
25.	25-07-2025	F Area	618.6	119.6
26.	26-07-2025	F Area	540.1	102.7
27.	27-07-2025	F Area	566.6	103.6
28.	28-07-2025	F Area	621.8	116.3
29.	29-07-2025	F Area	559.0	105.0
30.	30-07-2025	F Area	549.0	113.9
31.	31-07-2025	F Area	585.8	117.6
Average			587.4	113.6

----End of Report----

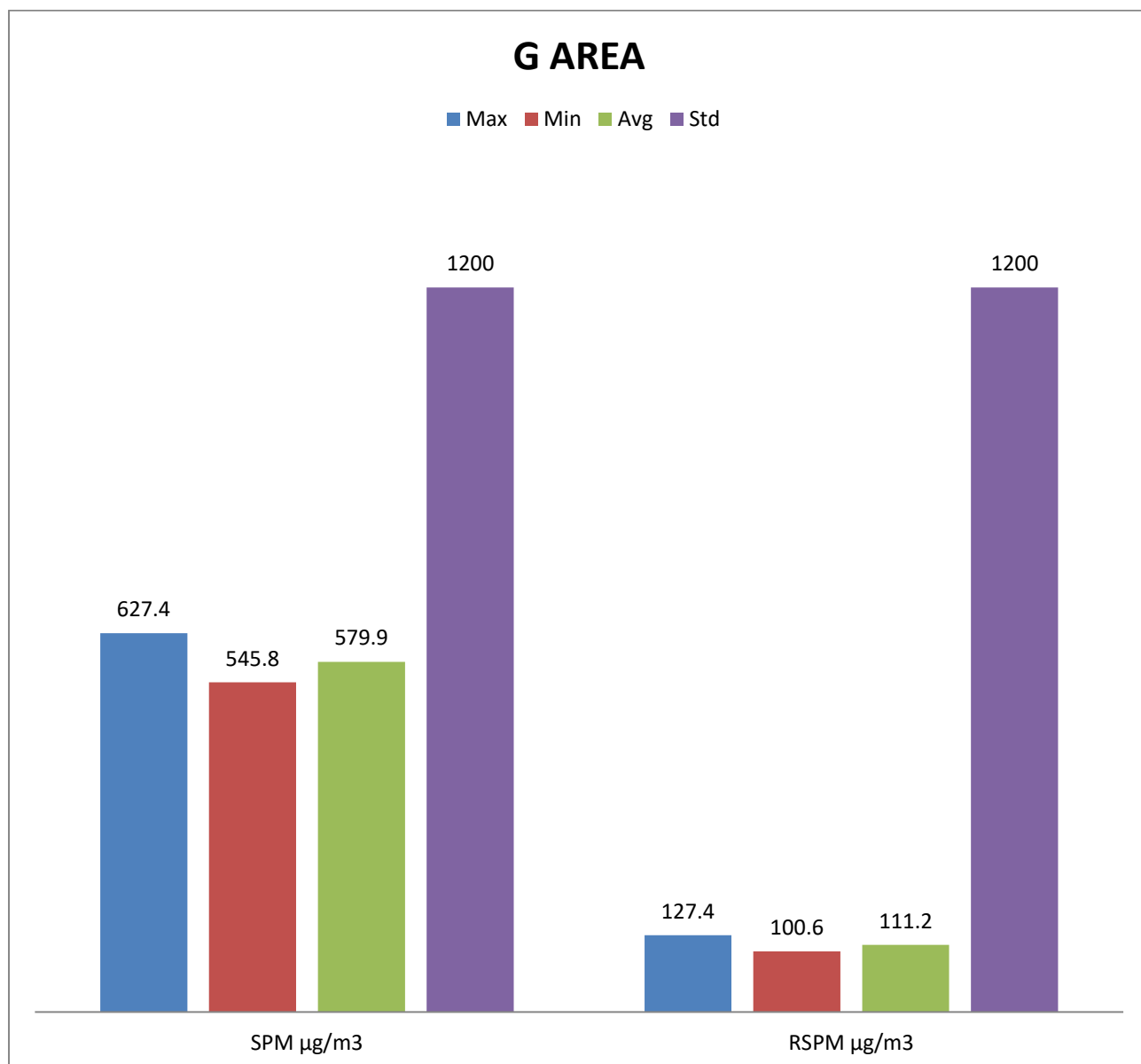


Authorized By

Technical Manager
(Midhun G)

3.2.4 G Area(F4)

The pollution level in G Area Quarry for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **627.4** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **545.8** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **100.6** $\mu\text{g}/\text{m}^3$ to **127.4** $\mu\text{g}/\text{m}^3$ during the month



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/153

Test Report Issue date: 02.08.2025


FUGITIVE EMISSION MONITORING REPORT FOR JULY 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **G Area**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM $\mu\text{g}/\text{m}^3$	RSPM $\mu\text{g}/\text{m}^3$
1.	01-07-2025	G Area	559.3	104.2
2.	02-07-2025	G Area	597.4	113.6
3.	03-07-2025	G Area	587.4	115.0
4.	04-07-2025	G Area	545.8	107.0
5.	05-07-2025	G Area	547.7	111.7
6.	06-07-2025	G Area	608.8	123.8
7.	07-07-2025	G Area	546.8	111.3
8.	08-07-2025	G Area	551.1	103.8
9.	09-07-2025	G Area	625.9	114.3
10.	10-07-2025	G Area	612.6	117.5
11.	11-07-2025	G Area	554.8	103.9
12.	12-07-2025	G Area	570.4	116.9
13.	13-07-2025	G Area	553.8	106.2
14.	14-07-2025	G Area	577.6	116.0
15.	15-07-2025	G Area	589.9	107.1
16.	16-07-2025	G Area	608.0	121.3
17.	17-07-2025	G Area	553.2	100.6
18.	18-07-2025	G Area	627.4	125.7
19.	19-07-2025	G Area	547.3	108.4
20.	20-07-2025	G Area	554.5	102.3
21.	21-07-2025	G Area	622.4	127.4
22.	22-07-2025	G Area	594.9	119.0
23.	23-07-2025	G Area	573.8	103.3
24.	24-07-2025	G Area	582.5	113.8
25.	25-07-2025	G Area	593.1	107.1
26.	26-07-2025	G Area	617.7	119.1
27.	27-07-2025	G Area	552.4	108.8
28.	28-07-2025	G Area	563.1	101.5
29.	29-07-2025	G Area	590.4	107.1
30.	30-07-2025	G Area	594.2	107.1
31.	31-07-2025	G Area	572.9	103.5
Average			579.9	111.2

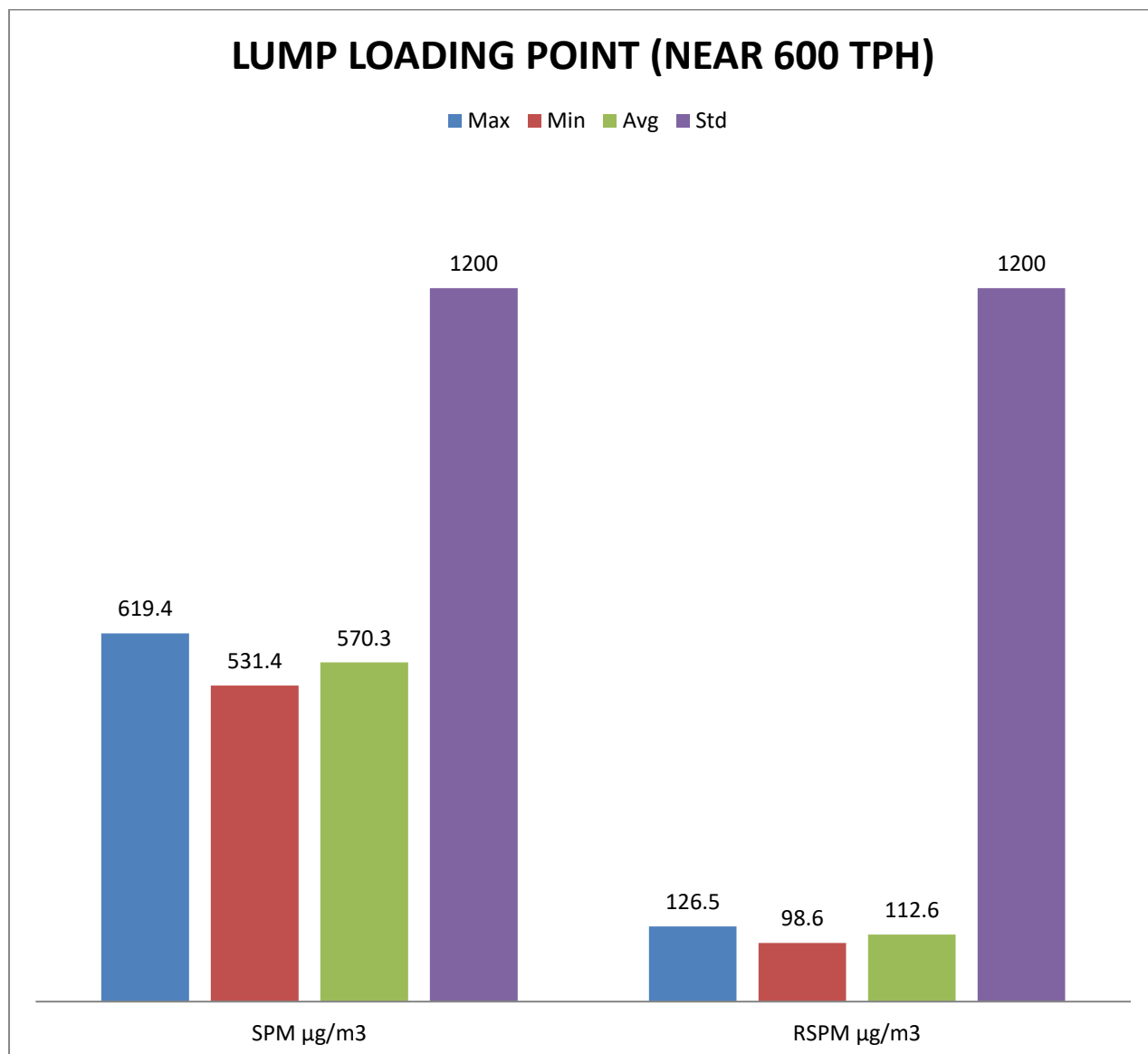
----End of Report----



Authorized By

Technical Manager
(Midhun G)

3.2.5 Lump Loading Point (Near 600 TPH) (F5)

The pollution level in Lump Loading Point (Near 600 TPH) for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **619.4** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **531.4** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **98.6** $\mu\text{g}/\text{m}^3$ to **126.5** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/154

Test Report Issue date: 02.05.2025

FUGITIVE EMISSION MONITORING REPORT FOR JULY 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **Lump Loading Point (Near 600 TPH)**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM $\mu\text{g}/\text{m}^3$	RSPM $\mu\text{g}/\text{m}^3$
1.	01-07-2025	Lump Loading Point (Near 600 TPH)	604.4	125.5
2.	02-07-2025	Lump Loading Point (Near 600 TPH)	533.3	109.5
3.	03-07-2025	Lump Loading Point (Near 600 TPH)	576.6	112.6
4.	04-07-2025	Lump Loading Point (Near 600 TPH)	551.1	104.1
5.	05-07-2025	Lump Loading Point (Near 600 TPH)	580.2	107.5
6.	06-07-2025	Lump Loading Point (Near 600 TPH)	581.4	115.3
7.	07-07-2025	Lump Loading Point (Near 600 TPH)	561.9	118.0
8.	08-07-2025	Lump Loading Point (Near 600 TPH)	597.4	125.5
9.	09-07-2025	Lump Loading Point (Near 600 TPH)	536.9	112.7
10.	10-07-2025	Lump Loading Point (Near 600 TPH)	611.3	116.0
11.	11-07-2025	Lump Loading Point (Near 600 TPH)	579.4	108.5
12.	12-07-2025	Lump Loading Point (Near 600 TPH)	560.8	113.5
13.	13-07-2025	Lump Loading Point (Near 600 TPH)	615.7	126.5
14.	14-07-2025	Lump Loading Point (Near 600 TPH)	549.8	103.9
15.	15-07-2025	Lump Loading Point (Near 600 TPH)	531.4	99.7
16.	16-07-2025	Lump Loading Point (Near 600 TPH)	602.8	119.1
17.	17-07-2025	Lump Loading Point (Near 600 TPH)	544.6	113.8
18.	18-07-2025	Lump Loading Point (Near 600 TPH)	569.1	104.6
19.	19-07-2025	Lump Loading Point (Near 600 TPH)	557.1	115.6
20.	20-07-2025	Lump Loading Point (Near 600 TPH)	619.4	120.4
21.	21-07-2025	Lump Loading Point (Near 600 TPH)	550.8	100.2
22.	22-07-2025	Lump Loading Point (Near 600 TPH)	533.8	102.1
23.	23-07-2025	Lump Loading Point (Near 600 TPH)	581.7	118.4
24.	24-07-2025	Lump Loading Point (Near 600 TPH)	538.9	108.7
25.	25-07-2025	Lump Loading Point (Near 600 TPH)	583.3	119.9
26.	26-07-2025	Lump Loading Point (Near 600 TPH)	612.4	119.2
27.	27-07-2025	Lump Loading Point (Near 600 TPH)	535.8	110.1
28.	28-07-2025	Lump Loading Point (Near 600 TPH)	617.9	118.2
29.	29-07-2025	Lump Loading Point (Near 600 TPH)	587.7	113.2
30.	30-07-2025	Lump Loading Point (Near 600 TPH)	533.0	109.1
31.	31-07-2025	Lump Loading Point (Near 600 TPH)	538.9	98.6
Average			570.3	112.6

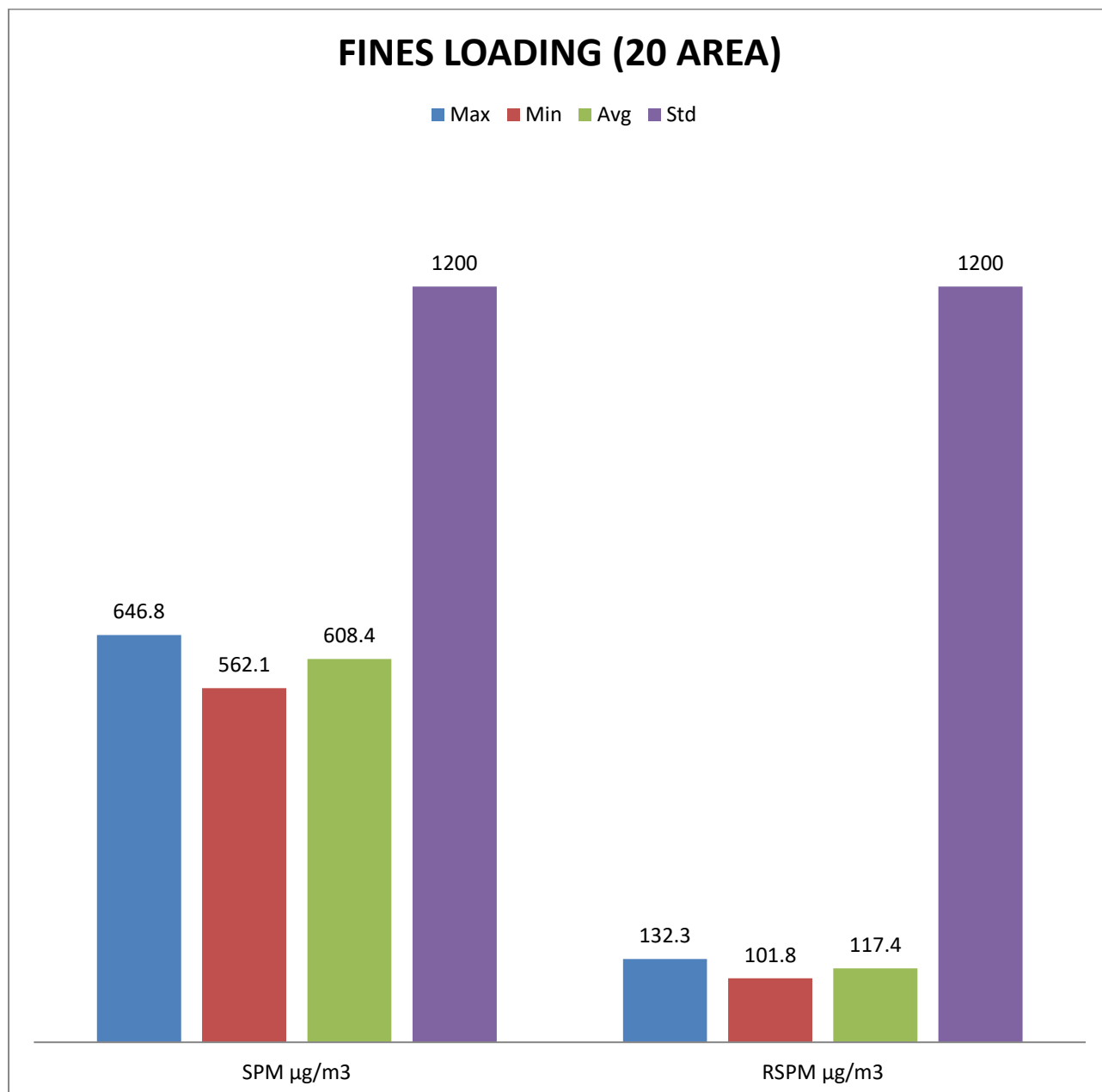
----End of Report----

Authorized By

 Technical Manager
 (Midhun G)

3.2.6 Fines Loading (20 area) (F6)

The pollution level in Fines Loading (20 area) for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **646.8** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **562.1** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **101.8** $\mu\text{g}/\text{m}^3$ to **117.4** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/155

Test Report Issue date: 02.08.2025

FUGITIVE EMISSION MONITORING REPORT FOR JULY 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **Fines Loading (20 area)**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM $\mu\text{g}/\text{m}^3$	RSPM $\mu\text{g}/\text{m}^3$
1.	01-07-2025	Fines Loading (20 area)	646.8	117.6
2.	02-07-2025	Fines Loading (20 area)	598.7	108.2
3.	03-07-2025	Fines Loading (20 area)	624.2	125.4
4.	04-07-2025	Fines Loading (20 area)	602.3	116.2
5.	05-07-2025	Fines Loading (20 area)	628.7	124.5
6.	06-07-2025	Fines Loading (20 area)	641.3	117.9
7.	07-07-2025	Fines Loading (20 area)	562.1	106.4
8.	08-07-2025	Fines Loading (20 area)	564.3	101.8
9.	09-07-2025	Fines Loading (20 area)	567.3	104.1
10.	10-07-2025	Fines Loading (20 area)	612.7	117.4
11.	11-07-2025	Fines Loading (20 area)	563.2	106.6
12.	12-07-2025	Fines Loading (20 area)	632.6	128.5
13.	13-07-2025	Fines Loading (20 area)	604.4	123.0
14.	14-07-2025	Fines Loading (20 area)	632.5	121.5
15.	15-07-2025	Fines Loading (20 area)	620.0	119.9
16.	16-07-2025	Fines Loading (20 area)	580.2	110.9
17.	17-07-2025	Fines Loading (20 area)	631.3	132.3
18.	18-07-2025	Fines Loading (20 area)	606.2	117.6
19.	19-07-2025	Fines Loading (20 area)	619.7	116.8
20.	20-07-2025	Fines Loading (20 area)	633.7	116.3
21.	21-07-2025	Fines Loading (20 area)	566.8	107.8
22.	22-07-2025	Fines Loading (20 area)	592.8	117.3
23.	23-07-2025	Fines Loading (20 area)	612.1	123.6
24.	24-07-2025	Fines Loading (20 area)	628.4	121.1
25.	25-07-2025	Fines Loading (20 area)	628.0	116.7
26.	26-07-2025	Fines Loading (20 area)	590.8	120.4
27.	27-07-2025	Fines Loading (20 area)	582.5	109.6
28.	28-07-2025	Fines Loading (20 area)	637.3	118.0
29.	29-07-2025	Fines Loading (20 area)	646.2	125.6
30.	30-07-2025	Fines Loading (20 area)	594.7	122.9
31.	31-07-2025	Fines Loading (20 area)	609.0	122.7
Average			608.4	117.4

---End of Report---

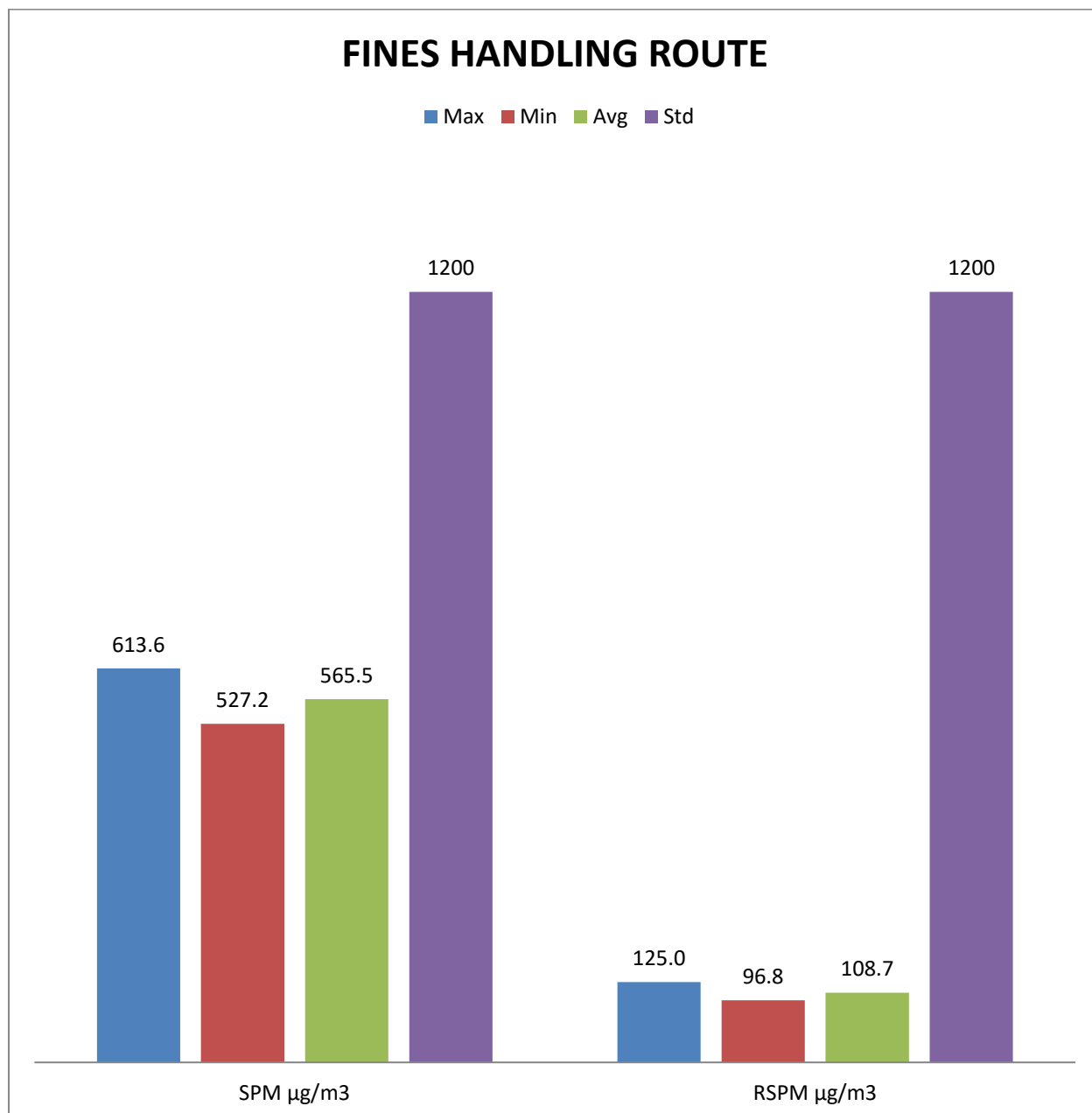


Authorized By

Technical Manager
(Midhun G)

3.2.7 Fines Handling Route (F7)

The pollution level in Fines Handling Route for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **613.6** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **527.2** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **96.8** $\mu\text{g}/\text{m}^3$ to **125.0** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/156

Test Report Issue date: 02.05.2025

FUGITIVE EMISSION MONITORING REPORT FOR JULY 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **Fines Handling Route**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM $\mu\text{g}/\text{m}^3$	RSPM $\mu\text{g}/\text{m}^3$
1.	01-07-2025	Fines Handling Route	550.9	102.5
2.	02-07-2025	Fines Handling Route	527.3	99.2
3.	03-07-2025	Fines Handling Route	547.7	102.1
4.	04-07-2025	Fines Handling Route	536.2	96.8
5.	05-07-2025	Fines Handling Route	557.4	114.3
6.	06-07-2025	Fines Handling Route	590.7	114.8
7.	07-07-2025	Fines Handling Route	598.2	116.4
8.	08-07-2025	Fines Handling Route	613.6	112.7
9.	09-07-2025	Fines Handling Route	565.1	102.8
10.	10-07-2025	Fines Handling Route	540.3	101.3
11.	11-07-2025	Fines Handling Route	583.3	110.5
12.	12-07-2025	Fines Handling Route	534.0	103.1
13.	13-07-2025	Fines Handling Route	565.7	112.9
14.	14-07-2025	Fines Handling Route	587.0	120.6
15.	15-07-2025	Fines Handling Route	596.0	111.9
16.	16-07-2025	Fines Handling Route	576.9	112.7
17.	17-07-2025	Fines Handling Route	575.5	109.0
18.	18-07-2025	Fines Handling Route	569.6	111.7
19.	19-07-2025	Fines Handling Route	546.7	103.1
20.	20-07-2025	Fines Handling Route	589.0	115.5
21.	21-07-2025	Fines Handling Route	550.5	103.7
22.	22-07-2025	Fines Handling Route	549.8	114.3
23.	23-07-2025	Fines Handling Route	565.5	107.6
24.	24-07-2025	Fines Handling Route	539.9	100.0
25.	25-07-2025	Fines Handling Route	608.5	125.0
26.	26-07-2025	Fines Handling Route	544.2	98.1
27.	27-07-2025	Fines Handling Route	568.2	113.7
28.	28-07-2025	Fines Handling Route	559.0	101.3
29.	29-07-2025	Fines Handling Route	561.5	114.4
30.	30-07-2025	Fines Handling Route	527.2	105.2
31.	31-07-2025	Fines Handling Route	605.1	111.3
Average			565.5	108.7

----End of Report----

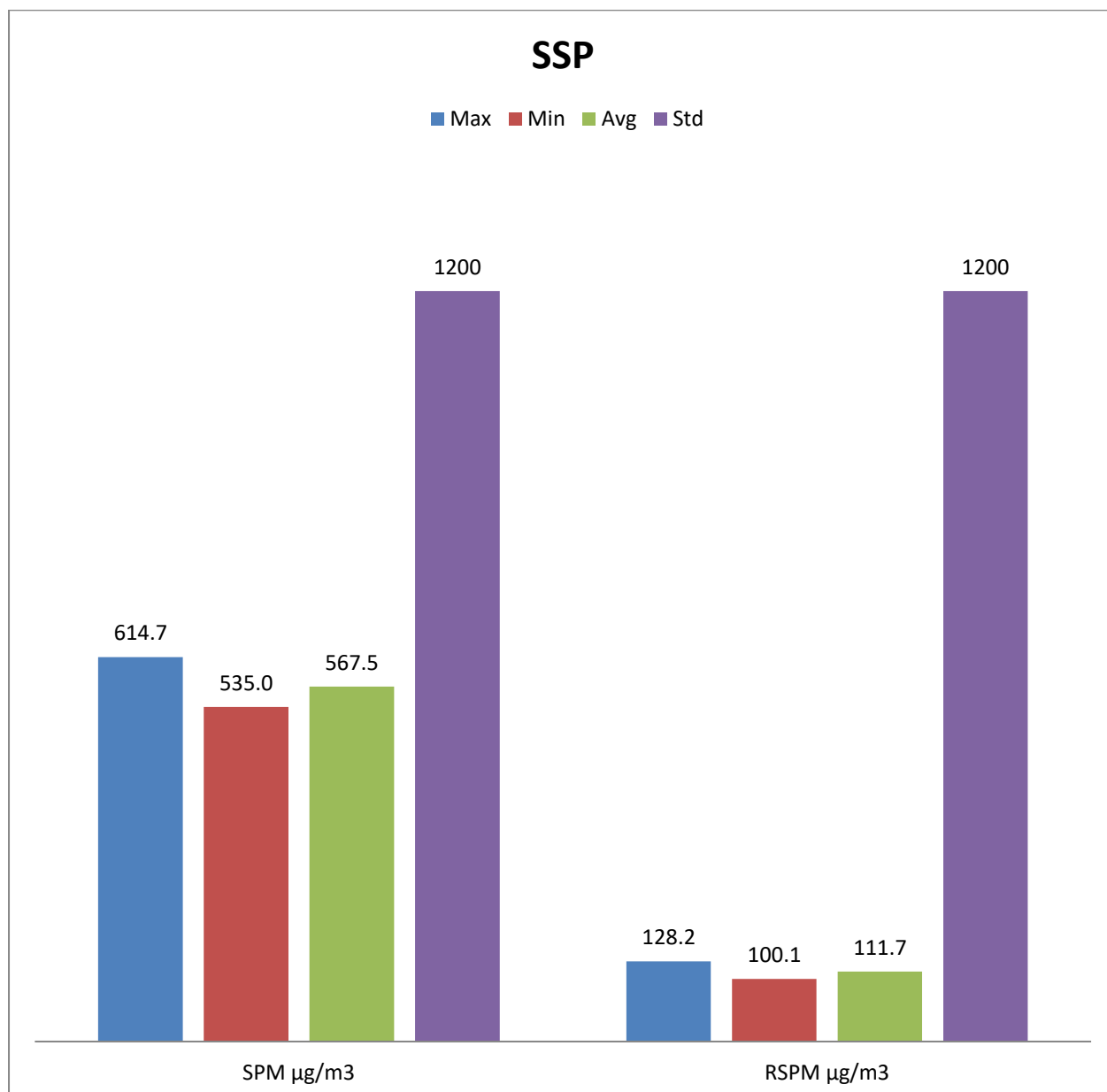


Authorized By

Technical Manager
(Midhun G)

3.2.8 SSP (F8)

The pollution level in SSP Quarry for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **614.7** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **535.0** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **100.1** $\mu\text{g}/\text{m}^3$ to **128.2** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/157

Test Report Issue date: 02.08.2025

FUGITIVE EMISSION MONITORING REPORT FOR JULY 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **SSP**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM $\mu\text{g}/\text{m}^3$	RSPM $\mu\text{g}/\text{m}^3$
1.	01-07-2025	SSP	540.0	107.7
2.	02-07-2025	SSP	597.8	108.8
3.	03-07-2025	SSP	577.6	104.5
4.	04-07-2025	SSP	577.1	109.2
5.	05-07-2025	SSP	548.9	112.6
6.	06-07-2025	SSP	614.6	122.5
7.	07-07-2025	SSP	564.8	108.8
8.	08-07-2025	SSP	602.2	123.0
9.	09-07-2025	SSP	556.2	105.0
10.	10-07-2025	SSP	545.2	100.1
11.	11-07-2025	SSP	548.6	102.1
12.	12-07-2025	SSP	571.2	114.9
13.	13-07-2025	SSP	556.2	110.3
14.	14-07-2025	SSP	559.9	109.6
15.	15-07-2025	SSP	557.5	106.3
16.	16-07-2025	SSP	614.7	128.2
17.	17-07-2025	SSP	565.6	113.9
18.	18-07-2025	SSP	570.1	118.0
19.	19-07-2025	SSP	535.0	110.1
20.	20-07-2025	SSP	561.4	102.5
21.	21-07-2025	SSP	601.8	123.0
22.	22-07-2025	SSP	592.9	118.7
23.	23-07-2025	SSP	570.1	116.1
24.	24-07-2025	SSP	540.5	112.4
25.	25-07-2025	SSP	559.5	116.4
26.	26-07-2025	SSP	559.7	105.9
27.	27-07-2025	SSP	549.8	105.3
28.	28-07-2025	SSP	571.7	107.6
29.	29-07-2025	SSP	561.1	105.9
30.	30-07-2025	SSP	566.7	117.6
31.	31-07-2025	SSP	555.3	116.3
Average			567.5	111.7

----End of Report----

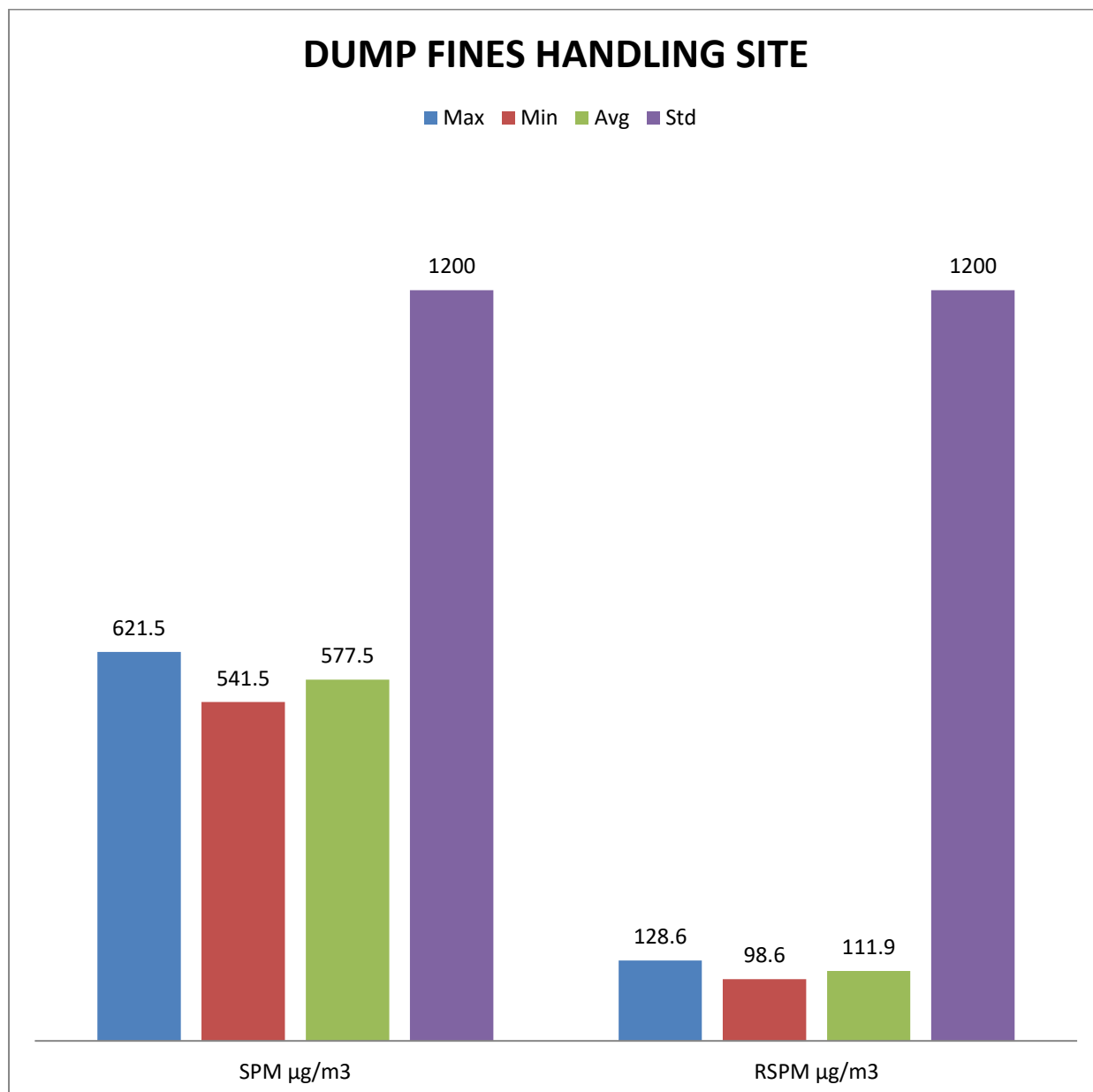


Authorized By

**Technical Manager
(Midhun G)**

3.2.9 Dump Fines Handling Site (F9)

The pollution level in Dump Fines Handling Site for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **621.5** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **541.5** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **98.6** $\mu\text{g}/\text{m}^3$ to **128.6** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/158

Test Report Issue date: 02.08.2025

FUGITIVE EMISSION MONITORING REPORT FOR JULY 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **Dump Fines Handling Site**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM $\mu\text{g}/\text{m}^3$	RSPM $\mu\text{g}/\text{m}^3$
1.	01-07-2025	Dump Fines Handling Site	612.1	122.0
2.	02-07-2025	Dump Fines Handling Site	595.1	122.0
3.	03-07-2025	Dump Fines Handling Site	609.3	121.2
4.	04-07-2025	Dump Fines Handling Site	560.9	101.0
5.	05-07-2025	Dump Fines Handling Site	618.9	128.6
6.	06-07-2025	Dump Fines Handling Site	567.0	102.3
7.	07-07-2025	Dump Fines Handling Site	593.0	108.9
8.	08-07-2025	Dump Fines Handling Site	548.0	109.1
9.	09-07-2025	Dump Fines Handling Site	583.1	114.4
10.	10-07-2025	Dump Fines Handling Site	541.5	98.6
11.	11-07-2025	Dump Fines Handling Site	549.2	114.5
12.	12-07-2025	Dump Fines Handling Site	563.9	108.9
13.	13-07-2025	Dump Fines Handling Site	566.3	111.1
14.	14-07-2025	Dump Fines Handling Site	553.4	103.5
15.	15-07-2025	Dump Fines Handling Site	567.1	117.7
16.	16-07-2025	Dump Fines Handling Site	556.7	112.2
17.	17-07-2025	Dump Fines Handling Site	621.5	120.4
18.	18-07-2025	Dump Fines Handling Site	584.6	108.0
19.	19-07-2025	Dump Fines Handling Site	613.0	111.6
20.	20-07-2025	Dump Fines Handling Site	562.2	102.8
21.	21-07-2025	Dump Fines Handling Site	619.4	126.6
22.	22-07-2025	Dump Fines Handling Site	541.9	102.5
23.	23-07-2025	Dump Fines Handling Site	569.6	115.9
24.	24-07-2025	Dump Fines Handling Site	556.4	104.6
25.	25-07-2025	Dump Fines Handling Site	601.1	120.8
26.	26-07-2025	Dump Fines Handling Site	607.9	125.4
27.	27-07-2025	Dump Fines Handling Site	552.3	100.8
28.	28-07-2025	Dump Fines Handling Site	609.7	111.7
29.	29-07-2025	Dump Fines Handling Site	553.8	102.2
30.	30-07-2025	Dump Fines Handling Site	551.9	103.4
31.	31-07-2025	Dump Fines Handling Site	570.4	117.5
Average			577.5	111.9

---End of Report---

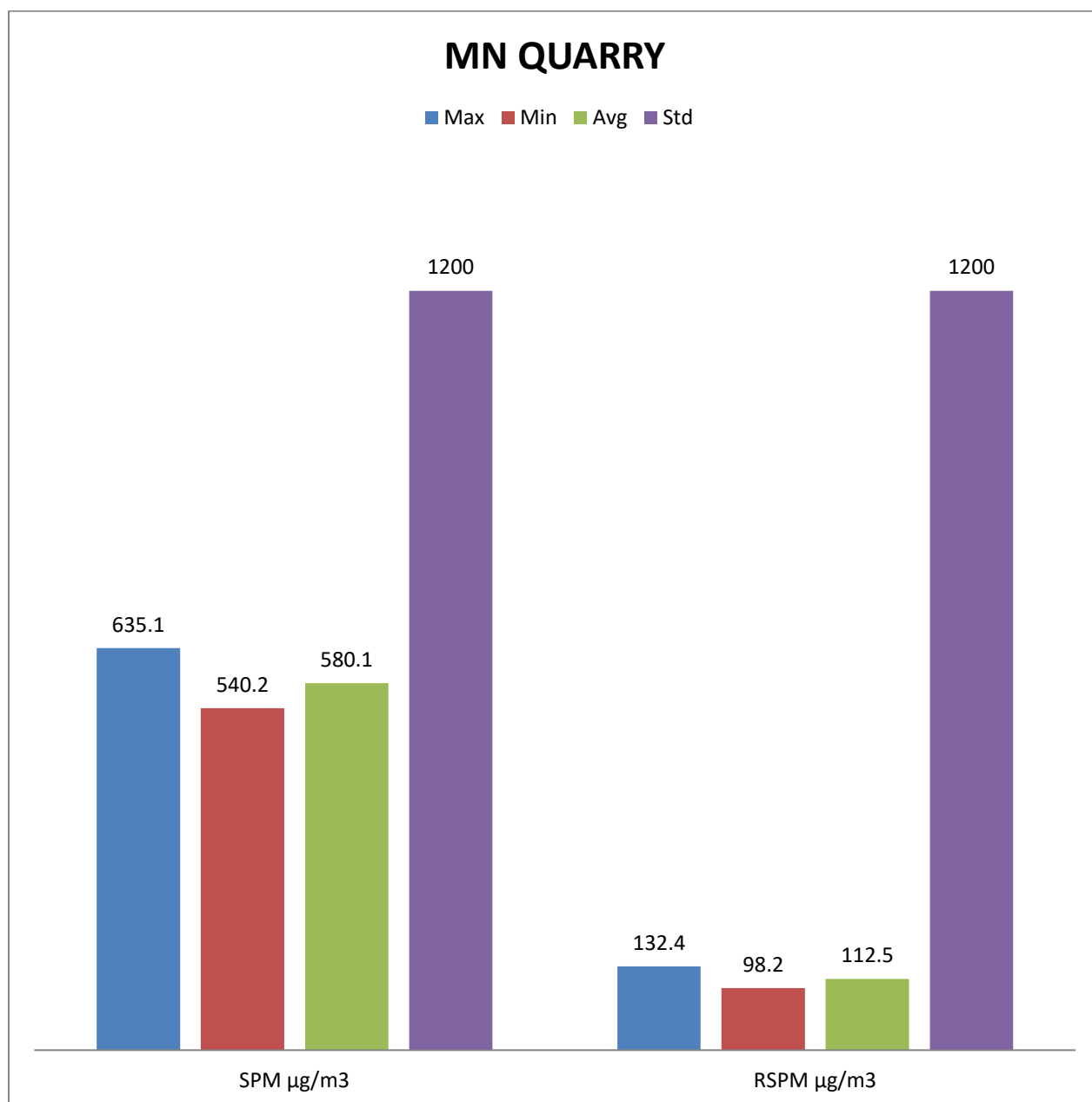


Authorized By

Technical Manager
(Midhun G)

3.2.10 Mn Quarry (F5)

The pollution level in Mn Quarry for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **635.1** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **540.2** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **98.2** $\mu\text{g}/\text{m}^3$ to **132.4** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/159

Test Report Issue date: 02.08.2025


FUGITIVE EMISSION MONITORING REPORT FOR JULY 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **Mn Quarry**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM $\mu\text{g}/\text{m}^3$	RSPM $\mu\text{g}/\text{m}^3$
1.	01-07-2025	Mn Quarry	591.5	114.9
2.	02-07-2025	Mn Quarry	558.3	111.0
3.	03-07-2025	Mn Quarry	575.0	109.5
4.	04-07-2025	Mn Quarry	578.8	108.0
5.	05-07-2025	Mn Quarry	566.0	113.7
6.	06-07-2025	Mn Quarry	629.2	122.3
7.	07-07-2025	Mn Quarry	545.3	105.8
8.	08-07-2025	Mn Quarry	540.2	112.9
9.	09-07-2025	Mn Quarry	587.1	118.4
10.	10-07-2025	Mn Quarry	558.6	117.2
11.	11-07-2025	Mn Quarry	541.7	101.0
12.	12-07-2025	Mn Quarry	544.7	110.2
13.	13-07-2025	Mn Quarry	555.4	102.8
14.	14-07-2025	Mn Quarry	577.5	117.2
15.	15-07-2025	Mn Quarry	614.0	114.5
16.	16-07-2025	Mn Quarry	635.1	123.2
17.	17-07-2025	Mn Quarry	590.5	108.2
18.	18-07-2025	Mn Quarry	543.2	103.2
19.	19-07-2025	Mn Quarry	548.2	101.5
20.	20-07-2025	Mn Quarry	561.6	111.6
21.	21-07-2025	Mn Quarry	621.7	114.7
22.	22-07-2025	Mn Quarry	541.7	98.2
23.	23-07-2025	Mn Quarry	599.1	115.6
24.	24-07-2025	Mn Quarry	631.8	132.4
25.	25-07-2025	Mn Quarry	561.9	114.9
26.	26-07-2025	Mn Quarry	604.4	119.0
27.	27-07-2025	Mn Quarry	610.1	113.7
28.	28-07-2025	Mn Quarry	601.5	116.5
29.	29-07-2025	Mn Quarry	597.9	113.1
30.	30-07-2025	Mn Quarry	542.4	99.9
31.	31-07-2025	Mn Quarry	628.8	120.9
Average			580.1	112.5

---End of Report---



Authorized By

Technical Manager
(Midhun G)

3.3 Surface/Effluent/Drinking Water Quality:

As per the guideline of CPCB, the following criteria shall be taken into consideration for use of the surface water bodies. Reports below shows the surface water quality analysis results at identified locations near the ML area.

Designated-Best-Use	Class of water	Criteria
Drinking Water Source without conventional treatment but after disinfection	A	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 50 or less pH between 6.5 and 8.5 Dissolved Oxygen 6mg/l or more Biochemical Oxygen Demand 5 days 20C 2mg/l or less
Outdoor bathing (Organized)	B	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 500 or less pH between 6.5 and 8.5 Dissolved Oxygen 5mg/l or more Biochemical Oxygen Demand 5 days 20C 3mg/l or less
Drinking water source after conventional treatment and disinfection	C	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 5000 or less pH between 6 to 9 Dissolved Oxygen 4mg/l or more Biochemical Oxygen Demand 5 days 20C 3mg/l or less
Propagation of Wild life and Fisheries	D	<ul style="list-style-type: none"> pH between 6.5 to 8.5 Dissolved Oxygen 4mg/l or more Free Ammonia (as N) 1.2 mg/l or less
Irrigation, Industrial Cooling, Controlled Waste disposal	E	<ul style="list-style-type: none"> pH between 6.0 to 8.5 Electrical Conductivity at 25C micro mhos/cm Max. 2250 Sodium absorption Ratio Max. 26 Boron Max. 2mg/l
	Below-E	Not Meeting A, B, C, D & E Criteria

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0087/0373/07/2025
		Issue Date of Test Report	05.08.2025
Type of Sample	Surface Water		
Sample Registration No.	0087	Name of Location	Jhikaria Nalla before Joining Karo River
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	22.07.2025	Time of Sample Collection	-
Date of Sample Receipt	24.07.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	24.07.2025	End Date of Analysis	05.08.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0373/07/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	IS 3025(Part-11)	2 - 12	7.61	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA,24th Ed. :2023,2540-D	5 -5000	20.0	-
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	1 -1000	22.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA, 23rd Ed. :2017,5210 B	1 -1000	2.2	3.0
5.	Fluoride as F	mg/l	APHA, 24th Ed.:2023 4500-F D	0.05 -10	0.14	1.5
6.	Nitrate Nitrogen	mg/l	IS 3025 (Part-34)	5-100	5.88	50
7.	Arsenic as As	mg/l	APHA, 24th Ed.: 2023,3125-B	0.01-2	<0.01	0.2
8.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025 (Part-52, Clause No-6)	0.05-20	<0.05	0.05
9.	Iron as Fe	mg/l	IS 3025 (Part-53, Clause No-6)	0.02-50	0.13	3.0
10.	Copper as Cu	mg/l	APHA, 24th Ed.: 2023,3125-B	0.05-5	<0.05	1.5
11.	Zinc as Zn	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-50	0.04	15.0
12.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.05	0.005
13.	Sulfide as S ²⁻	mg/l	IS 3025 (Part-29, Clause No-5)	0.05-10	<0.05	-
14.	Mercury as Hg	mg/l	APHA, 24th Ed.: 2023,3125-B	0.001-1	<0.001	-
15.	Manganese as Mn	mg/l	IS 3025 (Part-46, Clause No-5)	0.1-5.0	<0.1	-
16.	Lead as Pb	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.01-1	<0.01	0.1
17.	Cadmium as Cd	mg/l	APHA, 24th Ed.: 2023,3125-B	0.002-2	<0.002	0.01
18.	Nickel as Ni	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-10	<0.02	-
19.	Oil & Grease as O&G	mg/l	IS 3025 (Part-39, Clause No-5)	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part-26, Clause No-5)	0.5-10	<0.5	0.2
21.	Cyanide as CN ⁻	mg/l	APHA, 24th Ed:2023:2017, 4500-CN(K)	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----



Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0087/0371/07/2025
		Issue Date of Test Report	05.08.2025
Type of Sample	Surface Water		
Sample Registration No.	0087	Name of Location	Karo Near Lease Boundary at Linture Village
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	22.07.2025	Time of Sample Collection	-
Date of Sample Receipt	24.07.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	24.07.2025	End Date of Analysis	05.08.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0371/07/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	IS 3025(Part-11)	2 - 12	7.43	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Ed.:2023,2540-D	5 -5000	28.0	-
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	1 -1000	18.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA, 23rd Ed.:2017,5210 B	1 -1000	2.5	3.0
5.	Fluoride as F	mg/l	APHA, 24th Ed.:2023 4500-F D	0.05 -10	0.14	1.5
6.	Nitrate Nitrogen	mg/l	IS 3025 (Part-34)	5-100	<5	50
7.	Arsenic as As	mg/l	APHA, 24th Ed.: 2023,3125-B	0.01-2	<0.01	0.2
8.	Hexavalent Chromium as Cr ⁺⁺	mg/l	IS 3025 (Part-52, Clause No-6)	0.05-20	<0.05	0.05
9.	Iron as Fe	mg/l	IS 3025 (Part-53, Clause No-6)	0.02-50	0.10	3.0
10.	Copper as Cu	mg/l	APHA, 24th Ed.: 2023,3125-B	0.05-5	<0.05	1.5
11.	Zinc as Zn	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-50	0.06	15.0
12.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.05	0.005
13.	Sulphide as S ²⁻	mg/l	IS 3025 (Part-29, Clause No-5)	0.05-10	<0.05	-
14.	Mercury as Hg	mg/l	APHA, 24th Ed.: 2023,3125-B	0.001-1	<0.001	-
15.	Manganese as Mn	mg/l	IS 3025 (Part-46, Clause No-5)	0.1-5.0	<0.1	-
16.	Lead as Pb	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.01-1	<0.01	0.1
17.	Cadmium as Cd	mg/l	APHA, 24th Ed.: 2023,3125-B	0.002-2	<0.002	0.01
18.	Nickel as Ni	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-10	<0.02	-
19.	Oil & Grease as O&G	mg/l	IS 3025 (Part-39, Clause No-5)	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part-26, Clause No-5)	0.5-10	<0.5	0.2
21.	Cyanide as CN ⁻	mg/l	APHA, 24th Ed:2023:2017, 4500-CN(K)	0.02-10	<0.02	0.05


Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.

---End of Report---



Authorized By

Technical Manager
(Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0087/0375/07/2025
		Issue Date of Test Report	05.08.2025
Type of Sample	Surface Water	Name of Location	Panpash Nallah
Sample Registration No.	0087	Sample Collected By	EMPL Representative
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Time of Sample Collection	-
Date of Sample Collection	22.07.2025	Time of Sample Receipt	05:40 PM
Date of Sample Receipt	24.07.2025	End Date of Analysis	05.08.2025
Start Date of Analysis	24.07.2025	Sample Quantity	As per Requirement
Laboratory Environmental Condition	Temperature: 27 ± 2°C Humidity: 53%	Sample ID Code	ECO/LAB/0375/07/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	IS 3025(Part-11)	2 - 12	7.46	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Ed. :2023,2540-D	5 -5000	36.0	-
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	1 -1000	28.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA, 23rd Ed. :2017,5210 B	1 -1000	2.5	3.0
5.	Fluoride as F	mg/l	APHA, 24th Ed.:2023 4500-F D	0.05 -10	0.10	1.5
6.	Nitrate Nitrogen	mg/l	IS 3025 (Part-34)	5-100	6.22	50
7.	Arsenic as As	mg/l	APHA, 24th Ed.: 2023,3125-B	0.01-2	<0.01	0.2
8.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025 (Part-52, Clause No-6)	0.05-20	<0.05	0.05
9.	Iron as Fe	mg/l	IS 3025 (Part-53, Clause No-6)	0.02-50	0.22	3.0
10.	Copper as Cu	mg/l	APHA, 24th Ed. : 2023,3125-B	0.05-5	<0.05	1.5
11.	Zinc as Zn	mg/l	APHA, 23rd Ed. : 2017,3125-B	0.02-50	0.10	15.0
12.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.05	0.005
13.	Sulfide as S ²⁻	mg/l	IS 3025 (Part-29, Clause No-5)	0.05-10	<0.05	-
14.	Mercury as Hg	mg/l	APHA, 24th Ed. : 2023,3125-B	0.001-1	<0.001	-
15.	Manganese as Mn	mg/l	IS 3025 (Part-46, Clause No-5)	0.1-5.0	<0.1	-
16.	Lead as Pb	mg/l	APHA, 23rd Ed. : 2017,3125-B	0.01-1	<0.01	0.1
17.	Cadmium as Cd	mg/l	APHA, 24th Ed. : 2023,3125-B	0.002-2	<0.002	0.01
18.	Nickel as Ni	mg/l	APHA, 23rd Ed. : 2017,3125-B	0.02-10	<0.02	-
19.	Oil & Grease as O&G	mg/l	IS 3025 (Part-39, Clause No-5)	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part-26, Clause No-5)	0.5-10	<0.5	0.2
21.	Cyanide as CN ⁻	mg/l	APHA, 24th Ed:2023:2017, 4500-CN(K)	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

---End of Report---



Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0087/0376/07/2025
		Issue Date of Test Report	05.08.2025
Type of Sample	Surface Water		
Sample Registration No.	0087	Name of Location	Karo River Intake
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	22.07.2025	Time of Sample Collection	-
Date of Sample Receipt	24.07.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	24.07.2025	End Date of Analysis	05.08.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0376/07/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	IS 3025(Part-11)	2 - 12	7.28	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA,24th Ed. :2023,2540-D	5 -5000	32.0	-
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	1 -1000	30.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA, 23rd Ed. :2017,5210 B	1 -1000	2.7	3.0
5.	Fluoride as F	mg/l	APHA, 24th Ed.:2023 4500-F D	0.05 -10	0.10	1.5
6.	Nitrate Nitrogen	mg/l	IS 3025 (Part-34)	5-100	6.12	50
7.	Arsenic as As	mg/l	APHA, 24th Ed.: 2023,3125-B	0.01-2	<0.01	0.2
8.	Hexavalent Chromium as Cr ⁶⁺	mg/l	IS 3025 (Part-52, Clause No-6)	0.05-20	<0.05	0.05
9.	Iron as Fe	mg/l	IS 3025 (Part-53, Clause No-6)	0.02-50	0.08	3.0
10.	Copper as Cu	mg/l	APHA, 24th Ed.: 2023,3125-B	0.05-5	<0.05	1.5
11.	Zinc as Zn	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-50	<0.02	15.0
12.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.05	0.005
13.	Sulfide as S ²⁻	mg/l	IS 3025 (Part-29, Clause No-5)	0.05-10	<0.05	-
14.	Mercury as Hg	mg/l	APHA, 24th Ed.: 2023,3125-B	0.001-1	<0.001	-
15.	Manganese as Mn	mg/l	IS 3025 (Part-46, Clause No-5)	0.1-5.0	<0.1	-
16.	Lead as Pb	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.01-1	<0.01	0.1
17.	Cadmium as Cd	mg/l	APHA, 24th Ed.: 2023,3125-B	0.002-2	<0.002	0.01
18.	Nickel as Ni	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-10	<0.02	-
19.	Oil & Grease as O&G	mg/l	IS 3025 (Part-39, Clause No-5)	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part-26, Clause No-5)	0.5-10	<0.5	0.2
21.	Cyanide as CN ⁻	mg/l	APHA, 24th Ed.:2023:2017, 4500-CN(K)	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

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----End of Report----



Authorized By
[Signature]
Technical Manager
(Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/DW/0087/0373/07/2025
		Issue Date of Test Report	05.08.2025
Type of Sample	Drinking Water		
Sample Registration No.	0087	Name of Location	Mount Club Tap Water
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	22.07.2025	Time of Sample Collection	-
Date of Sample Receipt	24.07.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	24.07.2025	End Date of Analysis	05.08.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0373/07/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.98	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA 2540 D 24th Ed: 2023	5 -5000	<5	-	-
3.	Fluoride as F	mg/l	APHA 24th Edition 4500-F B&D	0.05 -10	0.10	1	1.5
4.	Nitrate Nitrogen	mg/l	IS:3025 (Part 34)	5-100	<5	45	No Relax
5.	Arsenic as As	mg/l	APHA 3125-B-24th Ed.:2023	0.01-2	<0.01	0.01	0.05
6.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025(Part 52,Clause No.6)	0.05-20	<0.05	-	-
7.	Iron as Fe	mg/l	IS 3025 (Part 53, Clause No. 6)	0.02-50	0.08	0.3	No Relax
8.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	0.05	1.5
9.	Zinc as Zn	mg/l	APHA 3125 B, 23rd Ed:2017	0.02-50	0.04	5.0	15.0
10.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.001	0.001	0.002
11.	Sulfide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	0.05	No Relax
12.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.001	0.001	No Relax
13.	Manganese as Mn	mg/l	IS 3025 (Part46, Clause No.5)	0.1-5.0	<0.1	0.1	0.3
14.	Cadmium as Cd	mg/l	APHA 3125 B-24th Ed.:2023	0.002-2	<0.002	0.003	No Relax
15.	Nickel as Ni	mg/l	APHA 3125 B, 23rd Edition:2017	0.02-10	<0.02	0.02	No Relax
16.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	2 -1000	<2	-	-
17.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 5210(B) 23 rd :2017	1 -1000	<1	-	-
18.	Oil & Grease as O&G	mg/l	APHA, 24th Edition 5520 D	2.5-1000	<5	-	-
19.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2	No Relax
20.	Lead as Pb	mg/l	APHA 3125 B, 23rd Ed:2017	0.01-1	<0.01	0.01	No Relax
21.	Cyanide as Cn ⁻	mg/l	APHA, 24th Ed.:2023:2017,4500CN -(K)	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note-

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2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below Detection Limit

----End of Report----



Authorized By

Technical Manager
(Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/DW/0087/0374/07/2025
		Issue Date of Test Report	05.08.2025
Type of Sample	Drinking Water		
Sample Registration No.	0087	Name of Location	Karo Guest House Tap Water
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	22.07.2025	Time of Sample Collection	-
Date of Sample Receipt	24.07.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	24.07.2025	End Date of Analysis	05.08.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0374/07/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.76	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA 2540 D 24th Ed: 2023	5 -5000	<5	-	-
3.	Fluoride as F	mg/l	APHA 24th Edition 4500-F B&D	0.05 -10	0.12	1	1.5
4.	Nitrate Nitrogen	mg/l	IS:3025 (Part 34)	5-100	<5	45	No Relax
5.	Arsenic as As	mg/l	APHA 3125-B-24th Ed.:2023	0.01-2	<0.01	0.01	0.05
6.	Hexavalent Chromium as Cr ⁶⁺	mg/l	IS 3025(Part 52, Clause No.6)	0.05-20	<0.05	-	-
7.	Iron as Fe	mg/l	IS 3025 (Part 53, Clause No. 6)	0.02-50	0.10	0.3	No Relax
8.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	0.05	1.5
9.	Zinc as Zn	mg/l	APHA 3125 B, 23rd Ed:2017	0.02-50	<0.02	5.0	15.0
10.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.001	0.001	0.002
11.	Sulfide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	0.05	No Relax
12.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.001	0.001	No Relax
13.	Manganese as Mn	mg/l	IS 3025 (Part46, Clause No.5)	0.1-5.0	<0.1	0.1	0.3
14.	Cadmium as Cd	mg/l	APHA 3125 B-24th Ed.:2023	0.002-2	<0.002	0.003	No Relax
15.	Nickel as Ni	mg/l	APHA 3125 B, 23rd Edition:2017	0.02-10	<0.02	0.02	No Relax
16.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	2 -1000	<2	-	-
17.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 5210(B) 23 rd :2017	1 -1000	<1	-	-
18.	Oil & Grease as O&G	mg/l	APHA, 24th Edition 5520 D	2.5-1000	<5	-	-
19.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2	No Relax
20.	Lead as Pb	mg/l	APHA 3125 B, 23rd Ed:2017	0.01-1	<0.01	0.01	No Relax
21.	Cyanide as Cn ⁻	mg/l	APHA, 24th Ed.:2023:2017,4500CN -(K)	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note:

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- The test samples will be disposed of after one Month from the date of issue of test report.
- BDL- Below Detection Limit

---End of Report---



Authorized By

Technical Manager
(Dr. Midhun G)



Ecomen Laboratories Pvt. Ltd.

CIN : U71200KA2024PTC187556 / GSTIN : 29AAICE1418R1Z3

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TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/WW/0087/0375/07/2025
		Issue Date of Test Report	05.08.2025
Type of Sample	Waste Water		
Sample Registration No.	0087	Name of Location	Oil Catch Pit Water Bottom Garbage
Sampling Method	APHA 24 th Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	22.07.2025	Time of Sample Collection	-
Date of Sample Receipt	24.07.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	24.07.2025	End Date of Analysis	05.08.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0375/07/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	GSR 422 (E) Desirable Limit
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.68	5.5-9.0
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540 D	5 -5000	38.0	100.0
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part 58)	1 -1000	20.0	250.0
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	IS 3025 (Part 44)	1 -1000	2.9	30.0
5.	Oil & Grease as O&G	mg/l	IS 3025 (Part39, Clause No.5)	2.5-1000	<2.5	10.0
6.	Fluoride as F	mg/l	APHA 4500 F D-24th Ed.: 2023	0.05 -10	0.24	2.0
7.	Nitrate nitrogen	mg/l	APHA 4500 NO2 B-24 th Ed.: 2023	5-100	7.0	-
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.01-2	0.20	-
9.	Arsenic as As	mg/l	APHA 3125-B-23rd Edition: 2017	0.05-20	<0.01	0.2
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IEC 62321: 2021	0.02-50	<0.05	2.0
11.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	3.0
12.	Zinc as Zn	mg/l	APHA 3125 B-24th Ed.:2023	0.02-50	<0.02	5.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 5530 C,D-24th Ed.:2023	0.05 - 10	<0.05	1.0
14.	Sulphide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	2.0
15.	Nickel as Ni	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.02	3.0
16.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.: 2023	0.1-5.0	<0.001	0.01
17.	Manganese as Mn	mg/l	IS 3025 (Part46, Clause No.5)	0.01-1	<0.1	-
18.	Lead as Pb	mg/l	APHA 3125 B-24th Ed.: 2023	0.002-2	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 3125 B-23rd Ed: 2017	0.02-10	<0.002	2.0
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	4.4	-
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.2

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

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---End of Report---



Authorized By

Technical Manager
(Dr. Midhun G)



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TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/WW/0087/0376/07/2025
		Issue Date of Test Report	05.08.2025
Type of Sample	Waste Water		
Sample Registration No.	0087	Name of Location	Oil Catch pit water G-Area
Sampling Method	APHA 24 th Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	22.07.2025	Time of Sample Collection	-
Date of Sample Receipt	24.07.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	24.07.2025	End Date of Analysis	05.08.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0376/07/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	GSR 422 (E)
						Desirable Limit
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.74	5.5-9.0
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540 D	5 -5000	40.0	100.0
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part 58)	1 -1000	24.0	250.0
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	IS 3025 (Part 44)	1 -1000	3.2	30.0
5.	Oil & Grease as O&G	mg/l	IS 3025 (Part39, Clause No.5)	2.5-1000	<2.5	10.0
6.	Fluoride as F	mg/l	APHA 4500 F D-24th Ed.: 2023	0.05 -10	0.21	2.0
7.	Nitrate nitrogen	mg/l	APHA 4500 NO2 B-24 th Ed.: 2023	5-100	5.47	-
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.01-2	0.22	-
9.	Arsenic as As	mg/l	APHA 3125-B-23rd Edition: 2017	0.05-20	<0.01	0.2
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IEC 62321: 2021	0.02-50	<0.05	2.0
11.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	3.0
12.	Zinc as Zn	mg/l	APHA 3125 B-24th Ed.:2023	0.02-50	<0.02	5.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 5530 C,D-24th Ed.:2023	0.05 - 10	<0.05	1.0
14.	Sulphide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	2.0
15.	Nickel as Ni	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.02	3.0
16.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.: 2023	0.1-5.0	<0.001	0.01
17.	Manganese as Mn	mg/l	IS 3025 (Part46, Clause No.5)	0.01-1	<0.1	-
18.	Lead as Pb	mg/l	APHA 3125 B-24th Ed.: 2023	0.002-2	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 3125 B-23rd Ed: 2017	0.02-10	<0.002	2.0
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	5.2	-
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.2

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

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----End of Report----



Authorized By

Technical Manager
(Dr. Midhun G)

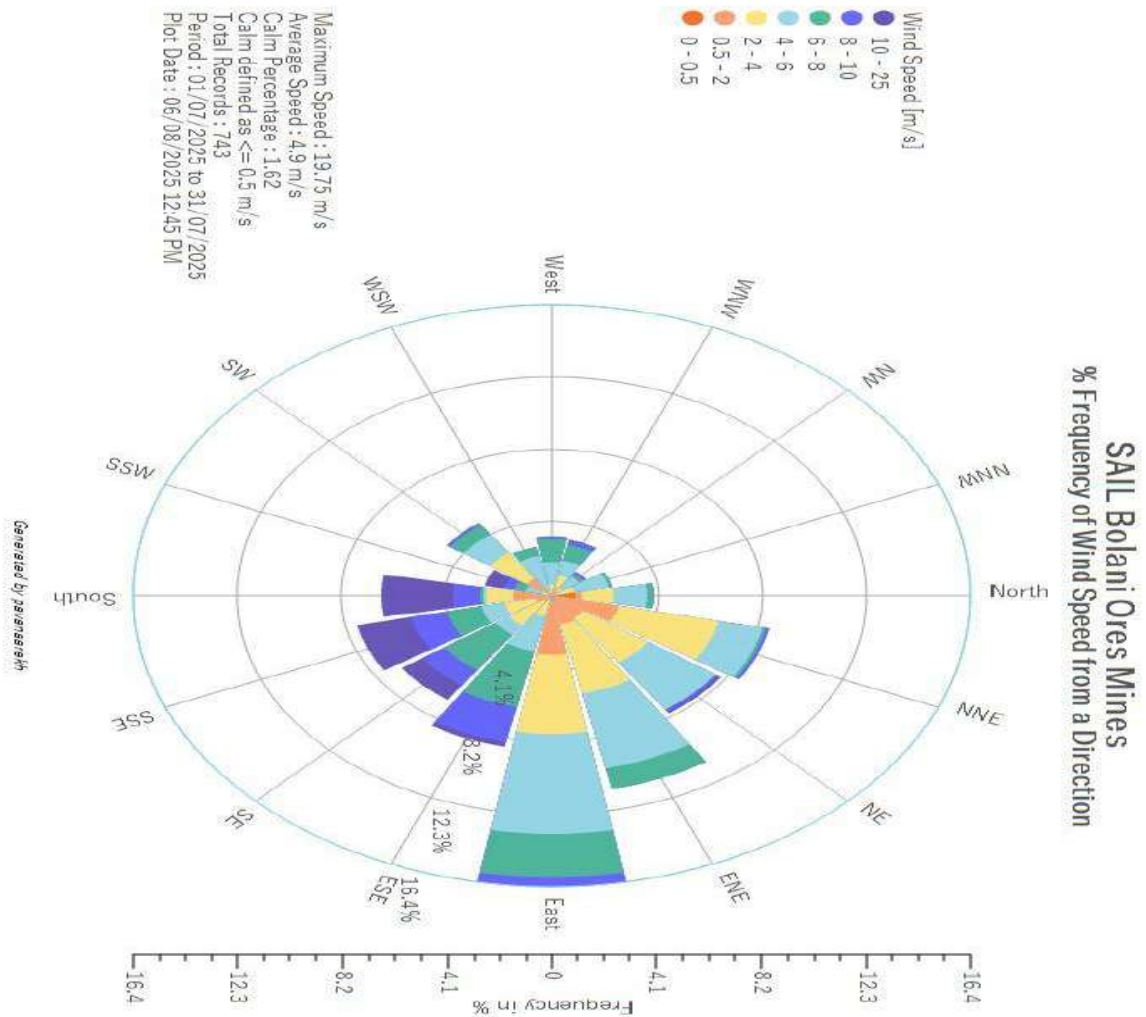
2.4.1 Meteorology

Summarized meteorological data such as temperature, relative humidity, rainfall, and wind speed and wind direction are given in **Table No. 2.4.2**. During the month of 'JULY 2025' the temperature varied from 25.3°C to 37.5°C & Relative Humidity varied from 48.3% to 98.9%. The maximum wind speed recorded during the month was 19.75 m/s and the overall average wind speed is calculated to be 4.9m/s, 1.62% of the time the wind remained calm (<0.5 m/s). The predominant wind direction as observed to be from East (E) direction during the month. The total rainfall observed during the month was 219 & 15 out of 31 were rainy days. Max. And Min. Value of temperature, relative humidity, rainfall, wind speed and wind direction on each day basis for JULY 2025 are given below.

Table No. 2.4.2: Results of Site Specific Meteorological Data

Parameters		JULY, 2025
Temperature (°C)	Maximum	37.5
	Minimum	25.3
	Average	28.94
Relative Humidity (%)	Maximum	98.9
	Minimum	48.3
	Average	85.07
Wind Speed(m/s)	Maximum	19.75
	Average	4.9
Wind Direction (%)	N	4.04
	NNE	8.74
	NE	8.07
	ENE	11.18
	E	16.42
	ESE	8.75
	SE	7.13
	SSE	7.8
	S	6.73
	SSW	2.68
	SW	4.97
	WSW	2.82
	W	3.36
	WNW	3.23
	NW	1.61
	NNW	2.42
	CALM	1.62
Rainfall(mm)	Monthly Total	219
	No. of rainy days	15

Figure No.2: Wind Rose (24 hrly) During the Month of JULY' 2025





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Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/AWS/66

Test Report Issue date: 02.08.2025

METEROLOGICAL MONITORING REPORT FOR JULY 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist- Keonjhar , Odisha**
2. Monitoring Instruments : **Automatic Weather Station (AWS)**
3. Sampling Location : **DAV Public School**

Date	Temperature (°C)		Relative Humidity (%)		Wind Speed (m/s)		Rainfall (mm)
	Max.	Min.	Max.	Min.	Max.	Min.	
01.07.2025	30.1	26.8	98.1	71.5	14.3	0	4.2
02.07.2025	28.4	25.8	91.1	76.8	19.8	0	6.2
03.07.2025	29.1	25.5	98.8	80.0	11.3	0	25.6
04.07.2025	31.4	25.8	98.8	69.4	8.75	0	12.6
05.07.2025	34.2	27.1	89.3	60.9	10.5	0	0.4
06.07.2025	34.5	27.2	86.8	56.2	9.25	0	0
07.07.2025	37.4	25.7	98.8	50.1	12.8	0	38.6
08.07.2025	36.6	25.3	98.7	51.2	9.5	0	0
09.07.2025	37.4	26.0	98.7	48.3	6.0	0	0
10.07.2025	37.5	26.1	98.7	51.1	12.3	0	0
11.07.2025	36.5	27.2	90.5	53.6	10.3	0	0
12.07.2025	34.5	27.4	88.8	59.3	13.3	0	0
13.07.2025	35.8	26.5	86.7	53.3	10.3	0	0
14.07.2025	36.9	26.4	98.8	54.5	10.8	0	31.0
15.07.2025	33.5	26.8	98.8	65.2	6.5	0	1.8
16.07.2025	35.5	26.6	98.8	55.4	6.25	0	2.8
17.07.2025	35.2	27.2	98.8	59.5	5.75	0	0
18.07.2025	35.0	26.3	98.8	57.8	9.5	0	0.6
19.07.2025	30.4	26.9	98.9	76.8	7.75	0	11.2
20.07.2025	31.8	26.1	98.9	78.6	9.5	0	2.8
21.07.2025	34.0	27.0	98.8	66.0	5.5	0	14.0
22.07.2025	34.7	26.2	98.8	61.3	4.75	0	5.2
23.07.2025	33.1	25.9	98.8	70.1	9.5	0	0.2
24.07.2025	30.4	25.8	98.8	78.2	8.75	0	1.0
25.07.2025	32.2	25.6	98.8	69.6	13.8	0	0
26.07.2025	35.8	26.9	98.8	57.2	15.0	0	5.6
27.07.2025	31.7	26.0	98.9	77.4	18.3	0	38.0
28.07.2025	36.8	26.2	98.9	53.1	5.75	0	5.0
29.07.2025	33.3	26.4	98.8	64.3	4.5	0	1.2
30.07.2025	31.1	27.0	98.8	73.6	8.0	0	0
31.07.2025	32.1	27.2	98.7	69.9	19.3	0	11.0

---End of Report---



Authorized By

(Signature)
Technical Manager
(Dr. Midhun G)



Ecomen Laboratories Pvt. Ltd.

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2.5 Surface Flow Rate (Nallah/Stream):

Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/SWF/56

Test Report Issue date: 02.08.2025

SURFACE FLOW RATE MONITORING REPORT FOR JULY 2025

1. Name of Industry : Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha
2. Monitoring Instruments : Flow Meter
3. Sampling Location : Karo River Limtur Villg, Jhikaria Nallah , Panposh Nallah
4. Sample collected by : EMPL representative in presence of Client's representative.

Location Name	Station Code	Result in (m/sec)
Karo River Limtur Village	SWFM1	0.72
Jhikaria nallah	SWFM2	0.45
Panposh Nallah	SWFM3	0.42

---End of Report---



Authorized By

Technical Manager
(Midhun G)



SAIL BOLANI ORES
MINES(RSP)

ENVIRONMENTAL
MONITORING

REPORT

AUGUST 2025

Presented By

**Ecomen Mining
Pvt.Ltd**



1.0 PREAMBLE

Steel Authority of India Limited (*hereinafter termed as SAIL*), is a central public sector undertaking under the ownership of Ministry of Steel, Govt. of India has engaged M/s Ecomen Mining Pvt. Ltd., Lucknow, U.P. for carrying out various **Environmental Monitoring and Analysis Work** in its Bolani Ores Mines –RSP located in the district of Keonjhar.

M/s Ecomen Mining Pvt. Ltd. has obtained MoEF & CC Recognition, NABL Accreditation and SPCB, Odisha empanelment for its laboratory division and also a NABET Accredited consultant to carry out EIA/EMP Report for various sectors like Mining, Mineral Beneficiation, Coal Washery, Thermal Power Plant, Metallurgical Industry and Infrastructure & Building Projects etc.

Work Order issued by Bolani Ores Mines-RSP-SAIL vide No-CC/REV/67/2025-26 dated.07.07.2025 for Environmental Monitoring & Analysis Work includes monitoring & analysis of Air Environment, Water Environment, Land Environment such as Ambient Air Quality, Work Zone Air Quality, Water Quality, Waste Water Quality, Vehicular Emission and Soil Quality. This report presents the Environmental monitoring data collected from the core and buffer zone of Bolani Ores Mines in respect of following Environmental attributes during ‘**August-2025**’ in the given frequency. Further, in compliance of condition no 6 (vi) of the EC Grant order vide J/11015/418/2008-IA.II(M) dated. 21.12.2012 and condition no 7 A(iii) of EC Grant order vide J/11015/396/2008-IA.II(M) dated. 21.12.2012 the analysis of air quality monitoring data is done in this report with the objective to see the effectiveness of the mitigative measures already implemented.

Scope of the Work

The scope of work as per the work order for FY-2025-26 is as follows:

Table No. 1.1: Scope of Work

Sl. No.	Particulates	Frequency of monitoring	No. of Stations
1.	Sampling & Analyses for Ambient Air Quality(AAQ) for 5 Parameters i.e. PM 10, PM 2.5, SO ₂ ,NO _x & CO	Daily	04
2.	Sampling & Analyses for Ambient Air Quality (AAQ) for 2 Parameters i.e. PM 10, PM 2.5	Daily	02
3.	Sampling & Analyses of Fugitive dust/Emission (SPM & RSPM)	Daily	10
4.	Sampling & Analyses of Surface/ effluent/ drinking water Quality for 21 parameter	Monthly	08
5.	Sampling and Analyses of ground water quality for 21 parameters	Quarterly	03
6.	Sampling and Analyses of Soil Samples for specified 9 parameters	Yearly	06
7.	Monitoring of weather/meteorological Parameters and continuous generation of data daily round the year by	Daily	01

	establishing online station round the clock throughout the Year		
8.	Smoke Density Monitoring of Vehicular Exhaust	Annually	09
9.	Ground water level Monitoring	Quarterly	03
10.	Nallah/River Flow rate Monitoring	Monthly	03

2.0 DETAILS OF MONITORING/SAMPLING STATIONS:

To carry out the Environmental Data Generation program, ECOMEN in due consultation with SAIL has identified different locations to collect the samples for Air & Water Environment in and around the mining lease area. The details of stations identified are as follows. The details of locations identified for monitoring different environmental parameters are given in the subsequent sections.

2.1 Ambient Air Quality (A)

The prime objective of the ambient air quality study is to establish the existing ambient air quality in and around the mining lease area. The existing ambient air quality was monitored at six (6) locations. Out of six (06) locations, monitoring was carried out for Particulate Matter (PM₁₀), Particulate Matter (PM_{2.5}), Sulphur Dioxide (SO₂), Oxides of Nitrogen (NO_x) as (NO₂) and Carbon Monoxide (CO) at (4) Location and monitoring of Particulate Matter (PM₁₀) and Particulate Matter (PM_{2.5}) was carried out at the rest two (2) Locations as per the guidelines stipulated by Central Pollution Control Board. The locations are as given below.

Table No. 2.1: Details of AAQ Monitoring Stations

Sl. No.	Station Details	ML	Frequency	Station Code	GPS Coordinates	
					Latitude	Longitude
Ambient Air Quality (AAQ) for 5 Parameters i.e. PM ₁₀ , PM _{2.5} , SO ₂ ,NO _x & CO						
1	Bolani Village Community Center	6.90	Daily	A1	22°5'34.13"N	85°19'33.43"E
2	DAV Public School	6.90		A2	22°7'7.37"N	85°20'16.61"E
3	Main Gate	5.10		A3	22°6'18.18"N	85°19'47.27"E
4	Bolani Mines Office complex	5.10		A4	22°6'23.84"N	85°19'45.40"E
Ambient Air Quality (AAQ) for 2 Parameters i.e. PM ₁₀ , PM _{2.5}						
5	Limtur Village	6.90		A5	22°7'35.14"N	85°21'10.46"E
6	Karo Guest House	6.90		A6	22°05'36.38"N	85°20'32.38"E

2.2 Work Zone Air Quality/Fugitive Dust Emission Monitoring (F)

To assess the level of fugitive dust due to mining and allied activities, ten (10) monitoring stations were selected within the lease considering the activity area. Fugitive emissions monitoring was carried out on Daily Basis. The locations are as given below.

Table No. 2.2: Details of Fugitive Emission Monitoring Stations

Sl. No.	Station Details	ML	Frequency	Station Code	GPS Coordinates	
					Latitude	Longitude
1	Panposh	5.10	Daily	F1	22°6'41.46"N	85°19'41.60"E
2	D Area	5.10		F2	22°07'19.78"N	85°20'5.70"E
3	F Area	5.10		F3	22°05'45.19"N	85°18'21.95"E
4	G Area	5.10		F4	22°06'3.88"N	85°18'8.22"E
5	Lump Loading Point (near 600TPH)	6.90		F5	22°06'18.79"N	85°19'54.78"E
6	Fines Loading Plant	6.90		F6	22°05'51.12"N	85°19'45.79"E
7	Dump Fines handling route	6.90		F7	22°5'39.31"N	85°19'26.29"E
8	SSP	5.10		F8	22°06'13.80"N	85°19'12.52"E
9	Dump Fines Handling Site	5.10		F9	22°06'09.94"N	85°19'30.61"E
10	Mn Quarry	6.90		F10	22°07'23.56"N	85°21'8.86"E

2.3 Surface/Effluent/Drinking Water Quality:

In order to assess the quality of surface/effluent/drinking water, Eight (8) locations were identified in and around the ML area. Out of eight (8) locations, surface water was taken from four (4) locations, drinking water was taken from two (2) locations and effluent water was taken from two (2) locations. One grab sample was collected from each location in the month and was analyzed for 21 parameters as stipulated in the scope of work. The details of the locations are as follows:

Table No. 2.3: Details of Surface/Effluent/Drinking Water Quality Monitoring Stations

Station Details	Frequency	Station Code	GPS Coordinates	
			Latitude	Longitude
Surface Water Quality				
Panposh Nallah	Monthly Once	SWQ-1	22°6'31.68"N	85°19'34.41"E
Karo Near Lease Boundary		SWQ-2	22°7'26.27" N	85°21'52.95"E
Karo River Intake		SWQ-3	22°5.13.02' N	85°19'57.88"E

Jhikaria nallah before joining Karo		SWQ-4	22°5'22.50" N	85°19'10.05"E
Drinking Water Quality				
Mount Club Tap Water	Monthly Once	DW-1	22°6'56.24" N	85°19'58.21"E
Karo Guest House Tap Water		DW-2	22°5'36.68" N	85°20'32.09"E
Effluent Waste Water				
Oil Catch Pit Water Bottom Garage	Monthly Once	EW-1	22°6'27.11" N	85°19'37.62"E
Oil Catch pit water G-Area		EW-2	22°6'1.83"N	85°18'24.16"E

2.4 Ground Water Quality (GWQ)

In order to assess the quality of ground water, three (3) locations were identified in and around the mining lease area. One grab sample is collected from each location quarterly and analyzed for 21 parameters as stipulated in the scope of work. The details of the locations are as follows:

Table No. 2.4: Details of Ground Water Quality Monitoring Stations

Station Details	Frequency	Station Code	GPS Coordinates	
			Latitude	Longitude
Ground Water Quality				
Bolani Village-Well water	Quarterly	GWQ-1	22° 05′ 27.20″N	85° 19′ 27.13″E
Bolani Gouda Basti-Well water		GWQ-2	22° 05′ 40.97″N	85° 20′ 2.45″E
Balagoda Village-Well water		GWQ-3	22° 05′ 57.02″N	85° 20′ 27.41″E

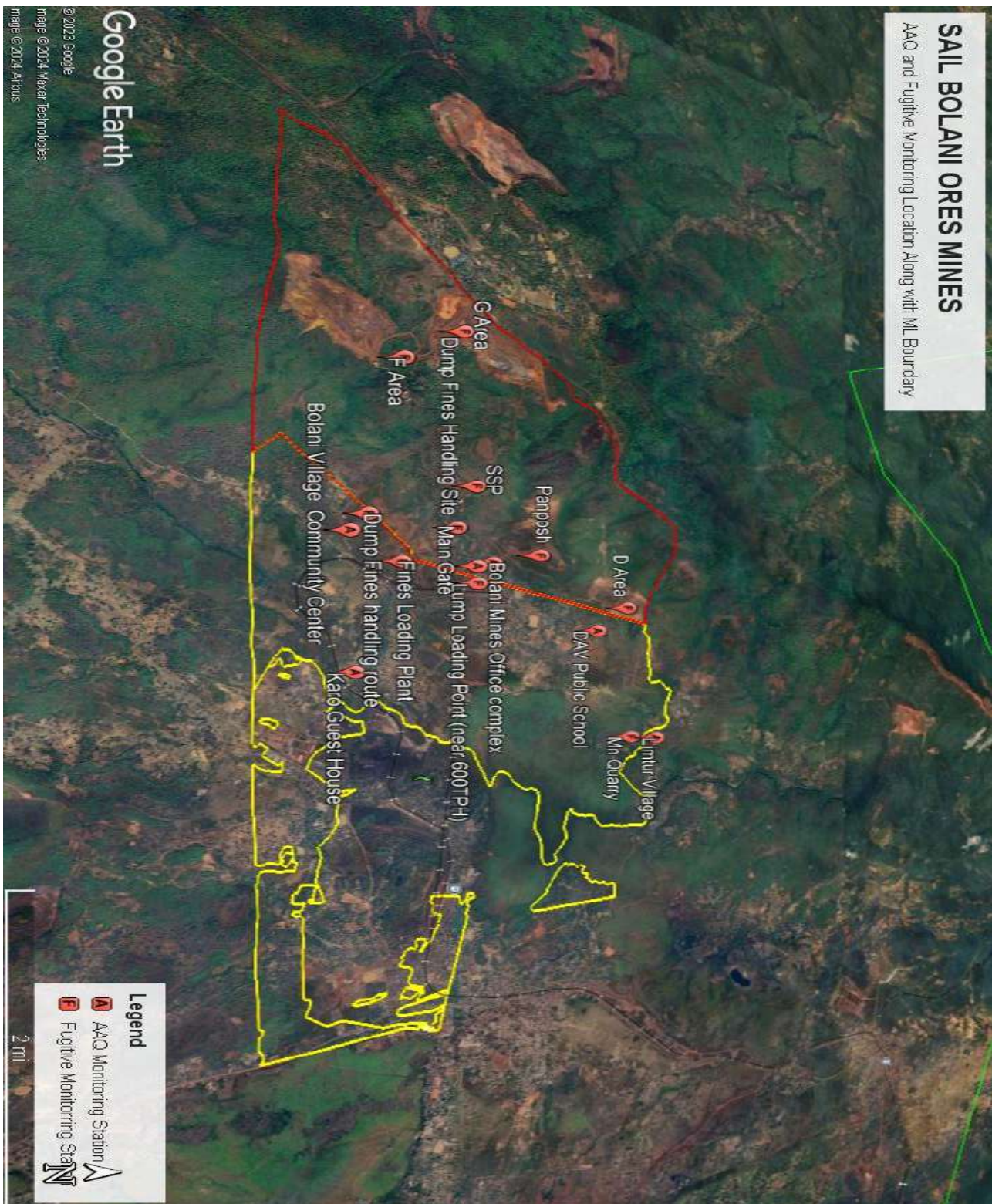
2.5 Weather/Meteorology

An Automatic Weather Monitoring Station (AWS) is installed at DAV Public School (22°7'7.85"N; 85°20'16.83"E) to collect the meteorological data on daily basis continuously. The parameters monitored at the meteorological station were Temperature, Relative Humidity, Wind Speed, Wind Direction and Rainfall. These parameters were recorded at weather monitoring station using the respective sensors.

Table No. 2.5: Details of Meteorological Monitoring Stations

Station Details	Frequency	Station Code	GPS Coordinates	
			Latitude	Longitude
DAV Public School	Daily Basis	M	22°7'7.85"N	85°20'16.83"E

Figure No.1: Location of Monitoring Station with ML Boundary



3.0 RESULTS AND DISCUSSION

3.1 Ambient Air Quality Monitoring

The Summarized results of AAQ for the month of August-2025 are given in the Table below

Table No. 3.1 (a): Summarized Results of Ambient Air Quality

Sl. No.	Location Name	Station Code	PM ₁₀			PM _{2.5}		
			Max.	Min.	Avg.	Max.	Min.	Avg.
1.	Bolani Village Community center	A1	58.0	50.4	54.51	23.0	15.2	19.09
2.	Dav Public School	A2	57.6	50.2	54.16	22.9	15.3	19.51
3.	Main Gate	A3	58.0	50.1	53.86	22.9	15.4	19.48
4.	Bolani Mines Office Complex	A4	57.9	50.3	53.65	22.6	15.5	19.66
5.	Limtur Village	A5	57.8	50.1	54.40	22.9	15.5	20.06
6.	Karo Guest House	A6	57.9	50.2	53.95	22.9	15.3	19.67
CPCB Std.			100 µg/m ³			60 µg/m ³		

Table No. 3.1(b): Summarized Results of Ambient Air Quality

Sl. No.	Location Name	Station Code	SO ₂			NO _x		
			Max.	Min.	Avg.	Max.	Min.	Avg.
1.	Bolani Village Community Center	A1	18.8	16.1	17.34	18.9	15.1	16.84
2.	Dav Public School	A2	18.8	16.1	17.63	18.9	15.1	16.95
3.	Main Gate	A3	19.0	16.1	17.57	19.0	15.1	17.23
4.	Bolani Mines Office Complex	A4	19.0	16.1	17.48	18.9	15.0	16.99
CPCB Std.			80 µg/m ³			80 µg/m ³		

BDL of SO₂ ≤ 4 µg/m³, BDL of NO_x ≤ 9 µg/m³ (No_x as NO₂)

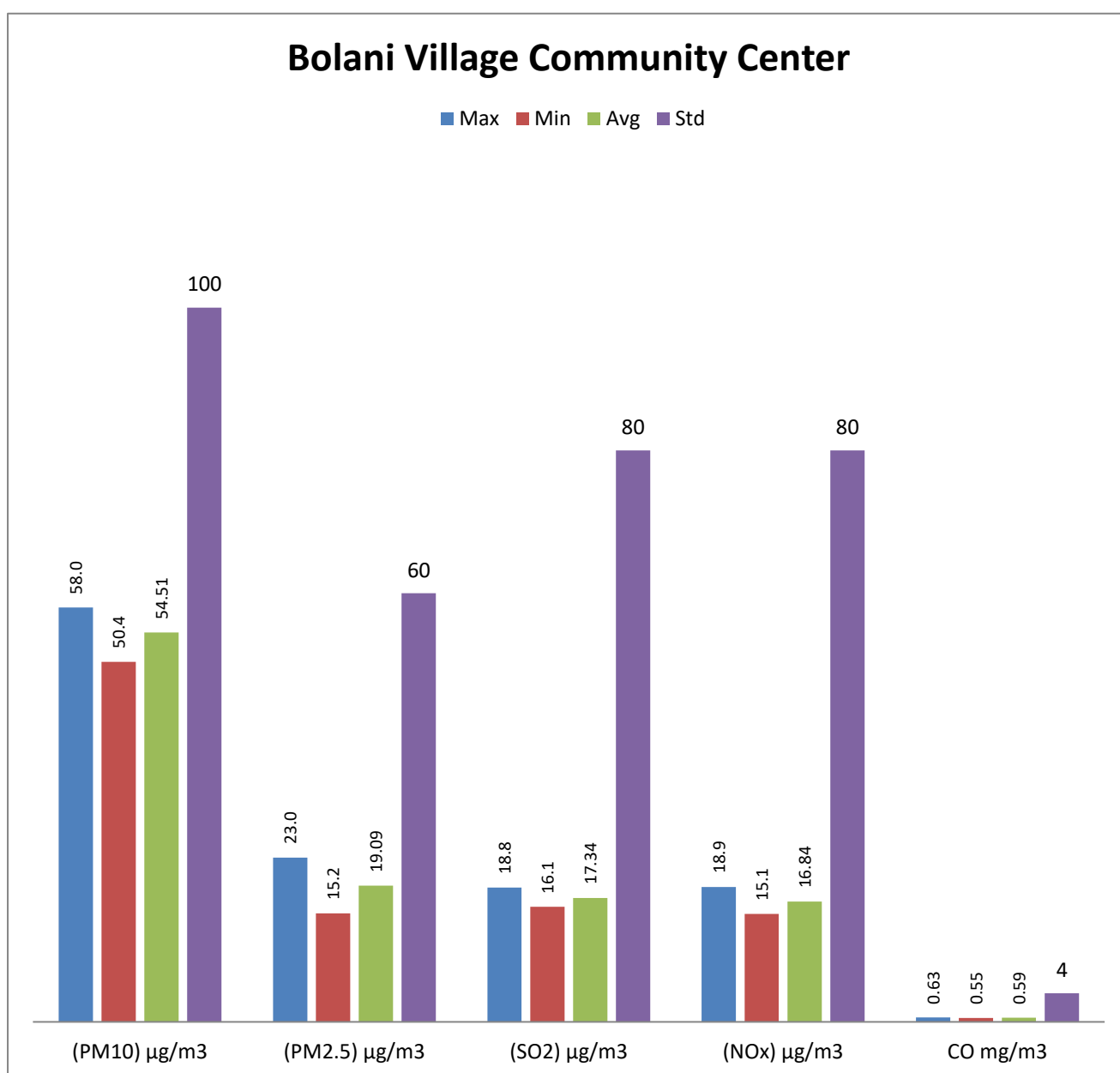
Table No. 3.1(c): Summarized Results of Ambient Air Quality

Sl. No.	Location Name	Station Code	CO		
			Max.	Min.	Avg.
1.	Bolani Village Community Center	A1	0.63	0.55	0.59
2.	Dav Public School	A2	0.64	0.55	0.60
3.	Main Gate	A3	0.63	0.55	0.59
4.	Bolani Mines Office Complex	A4	0.64	0.55	0.59
CPCB Std.			4 mg/m ³		

Note: BDL value for CO-0.11 mg/m³

3.1.1 Bolani village Community Center (A1):

The pollution level in Bolani village Community Center for the parameters PM₁₀, PM_{2.5}, SO₂, NO_x & CO is within the stipulated norms of CPCB. The maximum concentration of PM₁₀ was observed 58.0 µg/m³ whereas minimum concentration was observed 50.4 µg/m³ during the month. PM_{2.5} concentration ranges between 15.2 µg/m³ to 23.0 µg/m³, SO₂ concentration ranges between 16.1 µg/m³ to 18.8 µg/m³, NO_x as (NO₂) concentration ranges between 15.1 µg/m³ to 18.9 µg/m³ and CO concentration ranges between 0.55 mg/m³ to 0.63 mg/m³ was observed during the month



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/AAQ/160

Test Report Issue date: 02.09.2025

AMBIENT AIR QUALITY MONITORING REPORT FOR AUGUST 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer (NDIR)**
3. Sampling Location : **AAQMS-1: Bolani village Community Center**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Parameters		Particulate Matter (PM ₁₀) µg/m ³	Particulate Matter (PM _{2.5}) µg/m ³	Sulphur Di-oxide (SO ₂) µg/m ³	Nitrogen Oxides (NO _x) µg/m ³	Carbon mono-oxides as CO mg/m ³
PROTOCOL		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
Limits of Detection		10-1000	10-1000	5-200	5-200	0.1-100
Limit as per National Ambient Air Quality Standards		100	60	80	80	4
S. No.	Sampling Date	Results				
1.	01.08.2025	50.7	21.4	18.1	16.5	0.61
2.	02.08.2025	51.0	18.0	16.1	15.3	0.58
3.	03.08.2025	50.4	20.5	18.6	16.4	0.59
4.	04.08.2025	57.5	20.9	18.2	15.6	0.63
5.	05.08.2025	54.2	20.1	16.6	18.4	0.57
6.	06.08.2025	56.5	19.4	16.5	17.0	0.62
7.	07.08.2025	57.3	23.0	17.8	16.7	0.63
8.	08.08.2025	56.6	18.5	16.1	18.1	0.56
9.	09.08.2025	54.5	22.9	16.6	15.6	0.58
10.	10.08.2025	50.8	18.3	18.8	16.8	0.59
11.	11.08.2025	52.1	21.6	16.4	16.6	0.61
12.	12.08.2025	53.7	21.6	17.7	17.6	0.60
13.	13.08.2025	50.5	21.2	16.2	17.0	0.60
14.	14.08.2025	56.4	20.0	16.4	15.5	0.55
15.	15.08.2025	52.3	18.9	18.4	17.5	0.57
16.	16.08.2025	57.8	18.6	16.7	15.3	0.63
17.	17.08.2025	54.0	17.5	18.3	16.3	0.55
18.	18.08.2025	56.9	17.0	18.2	16.6	0.56
19.	19.08.2025	50.7	16.5	17.2	18.8	0.62
20.	20.08.2025	57.7	18.5	16.1	16.5	0.58
21.	21.08.2025	54.2	15.4	17.1	16.3	0.61
22.	22.08.2025	57.2	18.5	16.5	15.7	0.62
23.	23.08.2025	58.0	17.5	16.8	17.5	0.62
24.	24.08.2025	56.1	15.2	17.7	17.7	0.58
25.	25.08.2025	57.4	16.3	17.5	15.1	0.56
26.	26.08.2025	51.9	18.6	18.0	18.5	0.61
27.	27.08.2025	54.0	19.4	18.3	17.7	0.56
28.	28.08.2025	54.3	18.0	17.6	17.2	0.56
29.	29.08.2025	54.7	20.5	18.2	16.5	0.58
30.	30.08.2025	55.4	18.7	17.0	16.9	0.56
31.	31.08.2025	55.0	19.4	17.8	18.9	0.57
Average		54.5	19.1	17.3	16.8	0.59

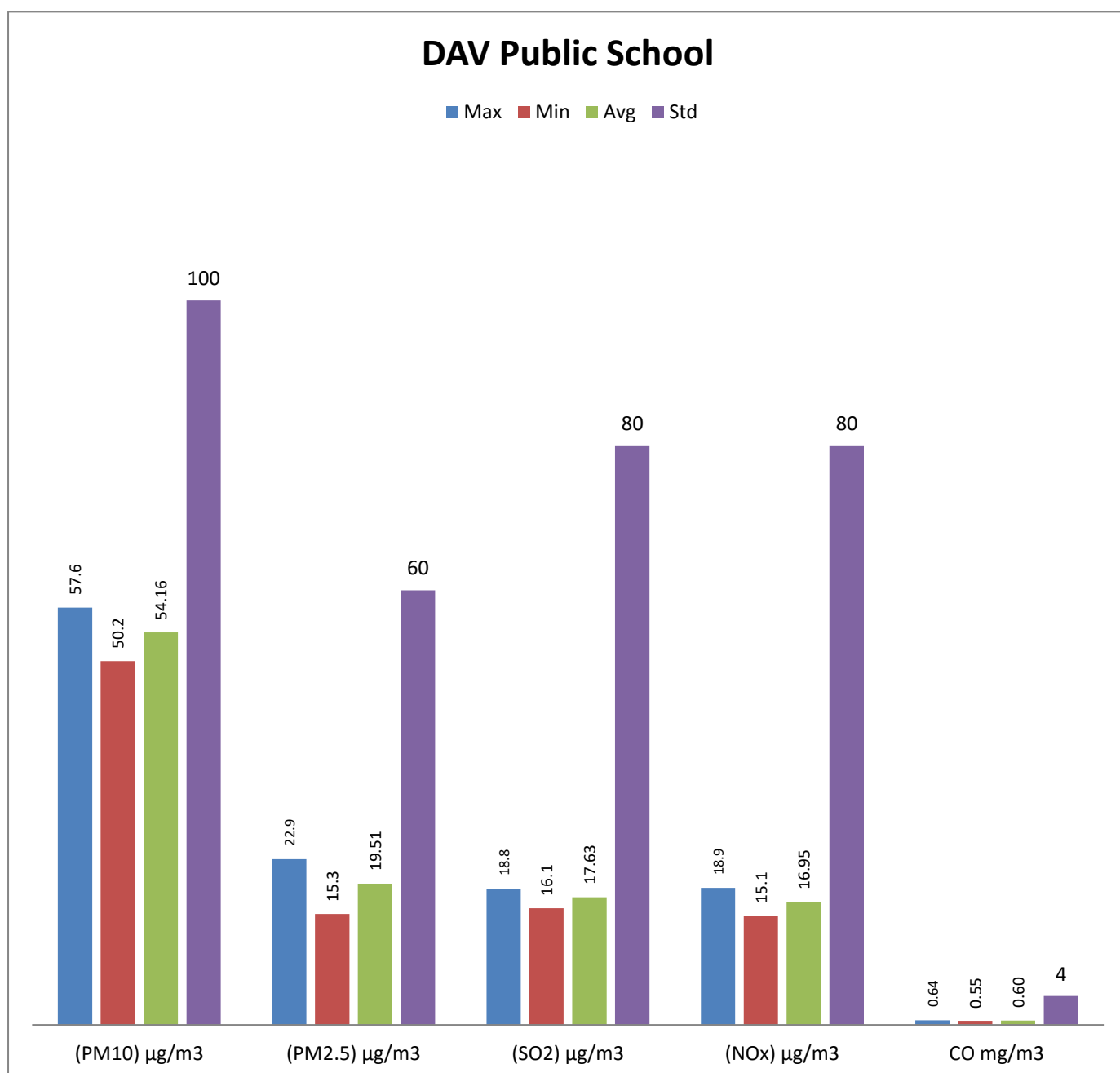
Note- No_x is Given as NO₂

----End of Report----

Authorized By
Technical Manager
(Dr. Midhun G)

3.1.2 DAV Public School (A2):

The pollution level in DAV Public School for the parameters PM₁₀, PM_{2.5}, SO₂, NO_x & CO is within the stipulated norms of CPCB. The maximum concentration of PM₁₀ was observed 57.6 µg/m³ whereas minimum concentration was observed 50.2µg/m³ during the month. PM_{2.5} concentration ranges between 15.3 µg/m³ to 22.9 µg/m³, SO₂ concentration ranges between 16.1 µg/m³ to 18.8 µg/m³, NO_x as (NO₂) concentration ranges between 15.1 µg/m³ to 18.9 µg/m³ and CO concentration ranges between 0.55 mg/m³ to 0.64 mg/m³ was observed during the month



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/AAQ/161

Test Report Issue date: 02.09.2025

AMBIENT AIR QUALITY MONITORING REPORT FOR AUGUST 2025

- Name of Industry : Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha
- Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer (NDIR)
- Sampling Location : AAQMS-2: DAV Public School
- Sample collected by : EMPL representative in presence of Client's representative.

Parameters		Particulate Matter (PM ₁₀) µg/m ³	Particulate Matter (PM _{2.5}) µg/m ³	Sulphur Di-oxide (SO ₂) µg/m ³	Nitrogen Oxides (NO _x) µg/m ³	Carbon mono-oxides as CO mg/m ³
PROTOCOL		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
Limits of Detection		10-1000	10-1000	5-200	5-200	0.1-100
Limit as per National Ambient Air Quality Standards		100	60	80	80	4
S. No.	Sampling Date	Results				
1.	01.08.2025	55.9	22.9	16.5	17.3	0.61
2.	02.08.2025	56.9	21.3	18.4	16.9	0.60
3.	03.08.2025	55.9	21.5	16.4	16.2	0.61
4.	04.08.2025	53.1	18.3	18.2	15.3	0.61
5.	05.08.2025	52.3	21.9	18.8	16.9	0.58
6.	06.08.2025	53.6	22.4	18.8	16.6	0.59
7.	07.08.2025	53.0	22.9	18.0	15.1	0.56
8.	08.08.2025	50.9	22.7	18.2	17.6	0.63
9.	09.08.2025	57.6	21.7	17.3	16.9	0.61
10.	10.08.2025	55.6	18.8	18.6	15.8	0.56
11.	11.08.2025	56.5	20.2	17.0	17.4	0.56
12.	12.08.2025	51.0	22.3	17.7	16.2	0.62
13.	13.08.2025	50.7	19.1	17.2	17.7	0.63
14.	14.08.2025	50.2	19.6	18.8	17.4	0.56
15.	15.08.2025	55.5	22.9	16.8	17.0	0.62
16.	16.08.2025	56.7	19.6	18.4	16.9	0.56
17.	17.08.2025	55.3	15.3	16.3	16.6	0.61
18.	18.08.2025	50.6	16.9	18.0	15.3	0.64
19.	19.08.2025	50.5	21.6	18.4	17.1	0.62
20.	20.08.2025	56.5	17.2	17.0	17.4	0.61
21.	21.08.2025	57.4	16.0	16.4	15.9	0.61
22.	22.08.2025	53.8	18.5	17.9	16.4	0.56
23.	23.08.2025	54.5	15.6	18.5	18.3	0.61
24.	24.08.2025	57.2	20.0	18.8	17.2	0.64
25.	25.08.2025	50.8	20.7	17.6	18.5	0.57
26.	26.08.2025	51.6	19.2	18.1	18.9	0.56
27.	27.08.2025	56.2	16.7	16.3	15.1	0.56
28.	28.08.2025	52.5	18.8	16.8	18.9	0.62
29.	29.08.2025	53.1	18.1	17.7	18.8	0.56
30.	30.08.2025	57.0	16.5	17.4	18.3	0.63
31.	31.08.2025	56.6	15.6	16.1	15.6	0.55
Average		54.2	19.5	17.6	17.0	0.60

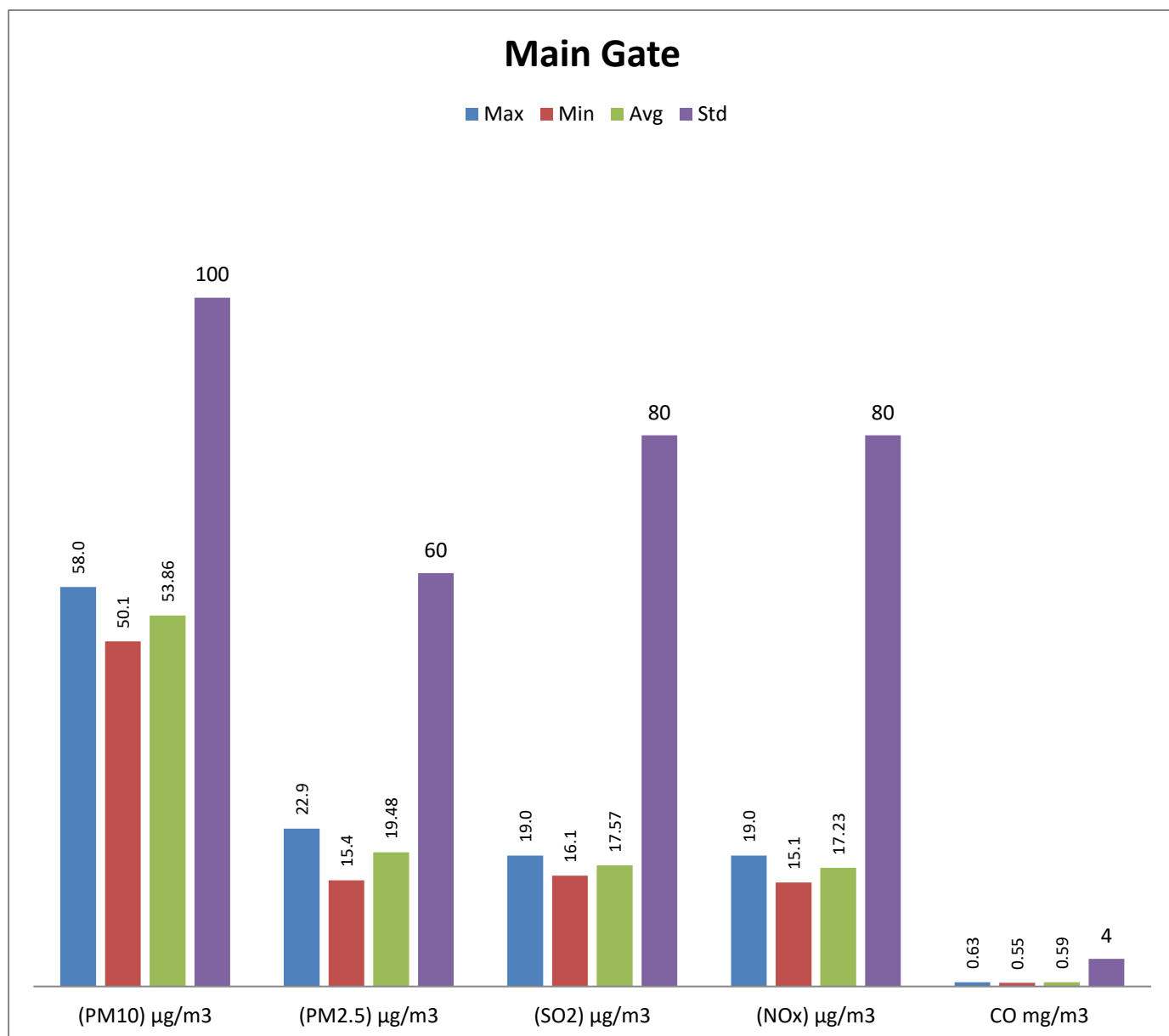
Note- No_x is Given as No₂

----End of Report----

Authorized By
Technical Manager
(Dr. Midhun G)

3.1.3 Main Gate (A3):

The pollution level in Main Gate for the parameters PM₁₀, PM_{2.5}, SO₂, NO_x & CO is within the stipulated norms of CPCB. The maximum concentration of PM₁₀ was observed 58.0 µg/m³ whereas minimum concentration was observed 50.1 µg/m³ during the month. PM_{2.5} concentration ranges between 15.4 µg/m³ to 22.9 µg/m³, SO₂ concentration ranges between 16.1 µg/m³ to 19.0 µg/m³, NO_x as (NO₂) concentration ranges between 15.1 µg/m³ to 19.0 µg/m³ and CO concentration ranges between 0.55 mg/m³ to 0.63 mg/m³ was observed during the month



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/AAQ/162

Test Report Issue date: 02.09.2025

AMBIENT AIR QUALITY MONITORING REPORT FOR AUGUST 2025

- Name of Industry : Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha
- Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer (NDIR)
- Sampling Location : AAQMS-3: Main Gate
- Sample collected by : EMPL representative in presence of Client's representative.

Parameters		Particulate Matter (PM ₁₀) µg/m ³	Particulate Matter (PM _{2.5}) µg/m ³	Sulphur Di-oxide (SO ₂) µg/m ³	Nitrogen Oxides (NO _x) µg/m ³	Carbon mono-oxides as CO mg/m ³
PROTOCOL		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
Limits of Detection		10-1000	10-1000	5-200	5-200	0.1-100
Limit as per National Ambient Air Quality Standards		100	60	80	80	4
S. No.	Sampling Date	Results				
1.	01.08.2025	57.2	19.8	16.1	18.8	0.63
2.	02.08.2025	51.5	19.8	16.3	18.2	0.59
3.	03.08.2025	50.1	22.9	18.5	18.5	0.55
4.	04.08.2025	54.1	22.4	18.0	18.6	0.57
5.	05.08.2025	56.7	22.1	17.1	15.9	0.58
6.	06.08.2025	55.3	20.7	18.4	18.7	0.57
7.	07.08.2025	51.2	18.8	16.8	17.5	0.62
8.	08.08.2025	50.1	18.2	18.9	16.9	0.55
9.	09.08.2025	52.6	22.2	16.7	17.2	0.61
10.	10.08.2025	56.2	22.5	17.5	15.3	0.60
11.	11.08.2025	53.9	18.1	16.3	16.0	0.61
12.	12.08.2025	55.1	22.6	19.0	18.2	0.63
13.	13.08.2025	51.8	18.4	16.6	17.8	0.58
14.	14.08.2025	55.7	20.8	18.5	15.1	0.57
15.	15.08.2025	52.5	22.0	17.2	16.1	0.56
16.	16.08.2025	50.5	19.7	16.2	16.7	0.57
17.	17.08.2025	53.2	18.6	16.9	16.0	0.58
18.	18.08.2025	57.8	17.1	18.7	19.0	0.61
19.	19.08.2025	55.2	16.9	18.9	16.6	0.63
20.	20.08.2025	53.9	19.1	18.0	16.2	0.62
21.	21.08.2025	53.1	15.6	18.0	16.6	0.58
22.	22.08.2025	54.9	15.9	16.3	16.8	0.57
23.	23.08.2025	55.5	15.4	18.0	17.9	0.60
24.	24.08.2025	52.0	19.2	16.5	15.8	0.60
25.	25.08.2025	57.9	15.4	18.0	17.7	0.62
26.	26.08.2025	58.0	16.3	18.1	17.4	0.61
27.	27.08.2025	53.0	20.8	16.3	18.2	0.62
28.	28.08.2025	51.6	21.7	18.7	17.5	0.57
29.	29.08.2025	51.3	21.7	18.6	17.3	0.63
30.	30.08.2025	55.2	17.6	17.5	17.0	0.55
31.	31.08.2025	52.7	21.7	18.1	18.5	0.59
Average		53.9	19.5	17.6	17.2	0.59

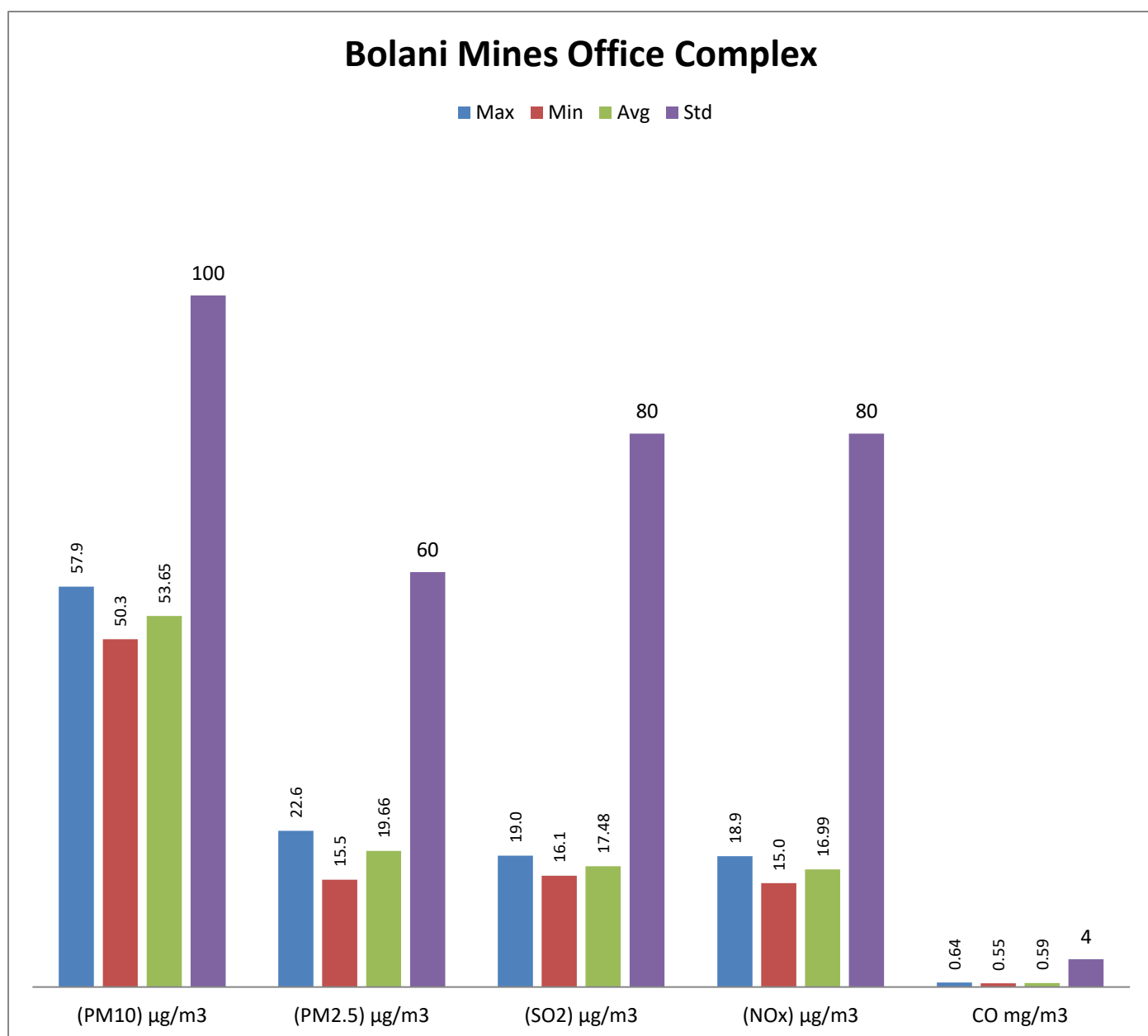
Note- No_x is Given as No₂

----End of Report----

Authorized By
Technical Manager
(Dr. Midhun G)

3.1.4 Bolani Mines Office Complex (A4):

The pollution level in Bolani Mines Office Complex for the parameters PM₁₀, PM_{2.5}, SO₂, NO_x & CO is within the stipulated norms of CPCB. The maximum concentration of PM₁₀ was observed 57.9 µg/m³ whereas minimum concentration was observed 50.3 µg/m³ during the month. PM_{2.5} concentration ranges between 15.5 µg/m³ to 22.6 µg/m³, SO₂ concentration ranges between 16.1 µg/m³ to 19.0 µg/m³, NO_x as (NO₂) concentration ranges between 15.0 µg/m³ to 18.9 µg/m³ and CO concentration ranges between 0.55 mg/m³ to 0.64 mg/m³ was observed during the month



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/AAQ/163

Test Report Issue date: 02.09.2025

AMBIENT AIR QUALITY MONITORING REPORT FOR AUGUST 2025

1. Name of Industry : Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha
2. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer (NDIR)
3. Sampling Location : AAQMS-4: Bolani Mines Office Complex
4. Sample collected by : EMPL representative in presence of Client's representative.

Parameters		Particulate Matter (PM ₁₀) µg/m ³	Particulate Matter (PM _{2.5}) µg/m ³	Sulphur Di-oxide (SO ₂) µg/m ³	Nitrogen Oxides (NO _x) µg/m ³	Carbon mono-oxides as CO mg/m ³
PROTOCOL		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
Limits of Detection		10-1000	10-1000	5-200	5-200	0.1-100
Limit as per National Ambient Air Quality Standards		100	60	80	80	4
S. No.	Sampling Date	Results				
1.	01.08.2025	57.3	22.6	16.8	16.7	0.58
2.	02.08.2025	54.9	21.5	16.1	16.9	0.60
3.	03.08.2025	55.4	19.7	18.9	17.6	0.56
4.	04.08.2025	50.3	21.3	18.9	15.0	0.57
5.	05.08.2025	55.2	20.1	16.2	18.1	0.56
6.	06.08.2025	57.9	19.5	16.5	17.9	0.59
7.	07.08.2025	52.6	19.5	16.8	15.8	0.55
8.	08.08.2025	50.9	21.6	17.0	15.5	0.59
9.	09.08.2025	50.6	21.9	16.2	18.5	0.59
10.	10.08.2025	53.2	19.8	16.9	17.1	0.61
11.	11.08.2025	54.6	21.5	19.0	16.3	0.62
12.	12.08.2025	54.8	18.8	16.8	16.5	0.57
13.	13.08.2025	53.9	21.5	18.2	15.2	0.57
14.	14.08.2025	55.7	22.4	16.5	16.2	0.60
15.	15.08.2025	52.7	20.8	18.6	15.7	0.62
16.	16.08.2025	50.6	16.3	18.4	18.9	0.62
17.	17.08.2025	53.8	21.9	18.2	18.7	0.62
18.	18.08.2025	53.8	15.5	18.5	17.3	0.56
19.	19.08.2025	57.6	18.1	16.8	18.2	0.57
20.	20.08.2025	55.5	18.1	17.3	17.2	0.60
21.	21.08.2025	51.0	20.5	17.3	15.8	0.64
22.	22.08.2025	53.3	19.9	18.3	16.6	0.58
23.	23.08.2025	55.5	21.8	18.9	17.4	0.59
24.	24.08.2025	52.1	16.2	17.7	18.4	0.62
25.	25.08.2025	53.8	15.5	17.0	18.6	0.59
26.	26.08.2025	50.3	20.5	18.3	16.7	0.58
27.	27.08.2025	51.5	16.6	16.5	15.9	0.60
28.	28.08.2025	55.2	17.3	17.0	16.1	0.56
29.	29.08.2025	51.9	21.1	17.5	15.4	0.63
30.	30.08.2025	54.5	18.2	16.4	18.9	0.55
31.	31.08.2025	52.9	19.6	18.3	17.7	0.60
Average		53.7	19.7	17.5	17.0	0.59

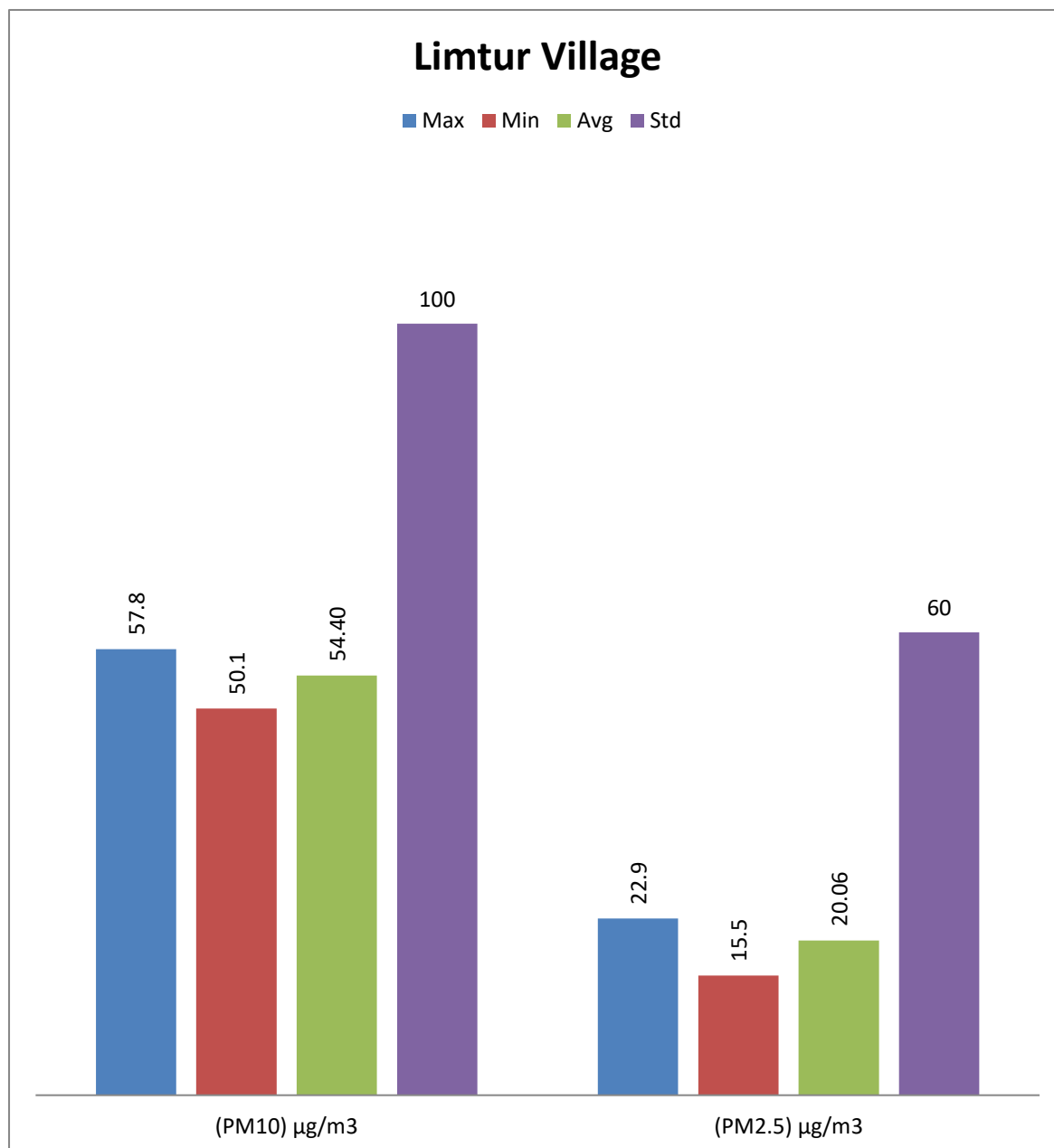
Note- No_x is Given as No₂

----End of Report----

Authorized By
Technical Manager
(Dr. Midhun G)

3.1.5 Limtur Village (A5):

The pollution level in Limtur Village for the parameters PM_{10} and $PM_{2.5}$ is within the stipulated norms of CPCB. The maximum concentration of PM_{10} was observed $57.8 \mu\text{g}/\text{m}^3$ whereas minimum concentration was observed $50.1 \mu\text{g}/\text{m}^3$ and $PM_{2.5}$ concentration ranges between $15.5 \mu\text{g}/\text{m}^3$ to $22.9 \mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/AAQ/164

Test Report Issue date: 02.09.2025

AMBIENT AIR QUALITY MONITORING REPORT FOR AUGUST 2025

1. Name of Industry : Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha
2. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer (NDIR)
3. Sampling Location : AAQMS-5: Limtur Village
4. Sample collected by : EMPL representative in presence of Client's representative.

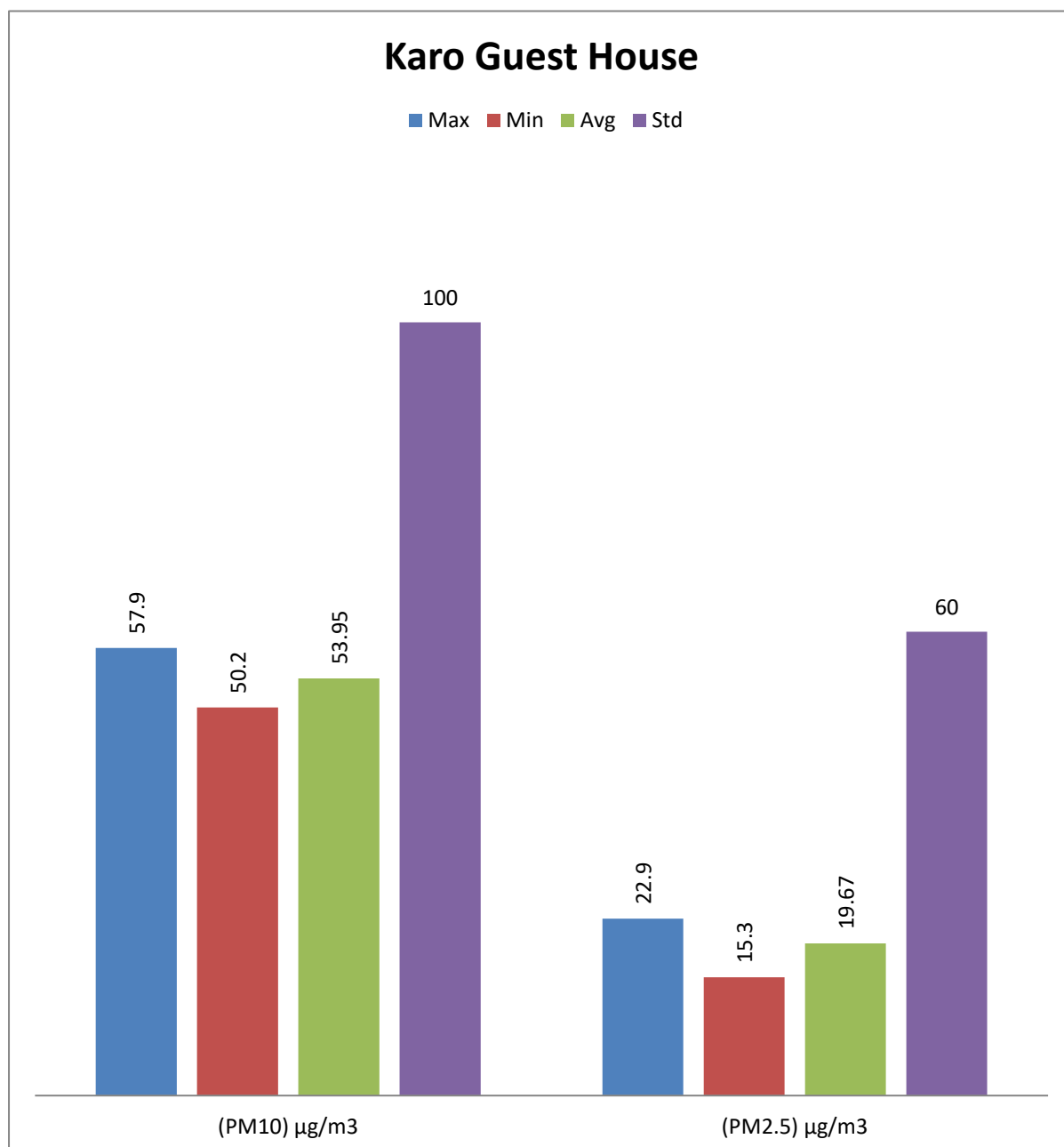
Parameters		Particulate Matter (PM ₁₀) µg/m ³	Particulate Matter (PM _{2.5}) µg/m ³
PROTOCOL		IS:5182(Part-23)	IS:5182(Part-24)
Limits of Detection		10-1000	10-1000
Limit as per National Ambient Air Quality Standards		100	60
S. No.	Sampling Date	Result	
1.	01.08.2025	53.3	19.1
2.	02.08.2025	50.5	21.5
3.	03.08.2025	56.1	18.4
4.	04.08.2025	57.8	20.3
5.	05.08.2025	50.7	21.2
6.	06.08.2025	52.2	22.2
7.	07.08.2025	52.7	19.1
8.	08.08.2025	56.3	21.7
9.	09.08.2025	55.9	21.0
10.	10.08.2025	56.2	22.9
11.	11.08.2025	51.7	22.3
12.	12.08.2025	56.1	21.5
13.	13.08.2025	54.5	21.2
14.	14.08.2025	55.0	20.7
15.	15.08.2025	55.8	20.9
16.	16.08.2025	54.8	21.2
17.	17.08.2025	57.6	20.1
18.	18.08.2025	56.5	21.9
19.	19.08.2025	50.1	19.1
20.	20.08.2025	57.0	19.4
21.	21.08.2025	51.4	20.7
22.	22.08.2025	53.3	17.0
23.	23.08.2025	51.1	17.4
24.	24.08.2025	56.9	16.1
25.	25.08.2025	53.3	17.5
26.	26.08.2025	52.0	21.6
27.	27.08.2025	56.8	18.9
28.	28.08.2025	55.3	18.4
29.	29.08.2025	57.6	21.2
30.	30.08.2025	52.5	21.9
31.	31.08.2025	55.3	15.5
Average		54.4	20.1

----End of Report----

Authorized By
Technical Manager
(Dr. Midhun G)

3.1.6 Karo Guest House (A6):

The pollution level in Karo Guest House for the parameters PM₁₀ and PM_{2.5} is within the stipulated norms of CPCB. The maximum concentration of PM₁₀ was observed **57.9** µg/m³ whereas minimum concentration was observed **50.2** µg/m³ and PM_{2.5} concentration ranges between **15.3** µg/m³ to **22.9** µg/m³ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/AAQ/165

Test Report Issue date: 02.09.2025

AMBIENT AIR QUALITY MONITORING REPORT FOR AUGUST 2025

1. Name of Industry : Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha
2. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer (NDIR)
3. Sampling Location : AAQMS-6: Karo Guest House
4. Sample collected by : EMPL representative in presence of Client's representative.

Parameters		Particulate Matter (PM ₁₀) µg/m ³	Particulate Matter (PM _{2.5}) µg/m ³
PROTOCOL		IS:5182(Part-23)	IS:5182(Part-24)
Limits of Detection		10-1000	10-1000
Limit as per National Ambient Air Quality Standards		100	60
S. No.	Sampling Date	Result	
1.	01.08.2025	55.4	19.1
2.	02.08.2025	53.3	22.4
3.	03.08.2025	57.9	22.4
4.	04.08.2025	57.8	20.3
5.	05.08.2025	57.8	18.3
6.	06.08.2025	52.5	22.6
7.	07.08.2025	53.9	19.5
8.	08.08.2025	55.6	20.6
9.	09.08.2025	51.3	20.5
10.	10.08.2025	54.5	19.5
11.	11.08.2025	51.6	22.9
12.	12.08.2025	55.2	18.2
13.	13.08.2025	50.2	22.1
14.	14.08.2025	51.9	21.9
15.	15.08.2025	50.4	20.8
16.	16.08.2025	55.7	15.3
17.	17.08.2025	53.5	16.0
18.	18.08.2025	57.3	22.0
19.	19.08.2025	52.5	21.6
20.	20.08.2025	53.5	16.6
21.	21.08.2025	51.3	18.2
22.	22.08.2025	56.1	16.8
23.	23.08.2025	55.0	15.8
24.	24.08.2025	56.6	19.2
25.	25.08.2025	52.5	21.0
26.	26.08.2025	55.2	18.1
27.	27.08.2025	50.4	18.3
28.	28.08.2025	56.0	18.8
29.	29.08.2025	53.0	20.4
30.	30.08.2025	52.5	20.7
31.	31.08.2025	52.1	19.9
Average		54.0	19.7

----End of Report----

Authorized By
Technical Manager
(Dr. Midhun G)

3.2 Work Zone Air Quality/Fugitive Dust Emission Monitoring:

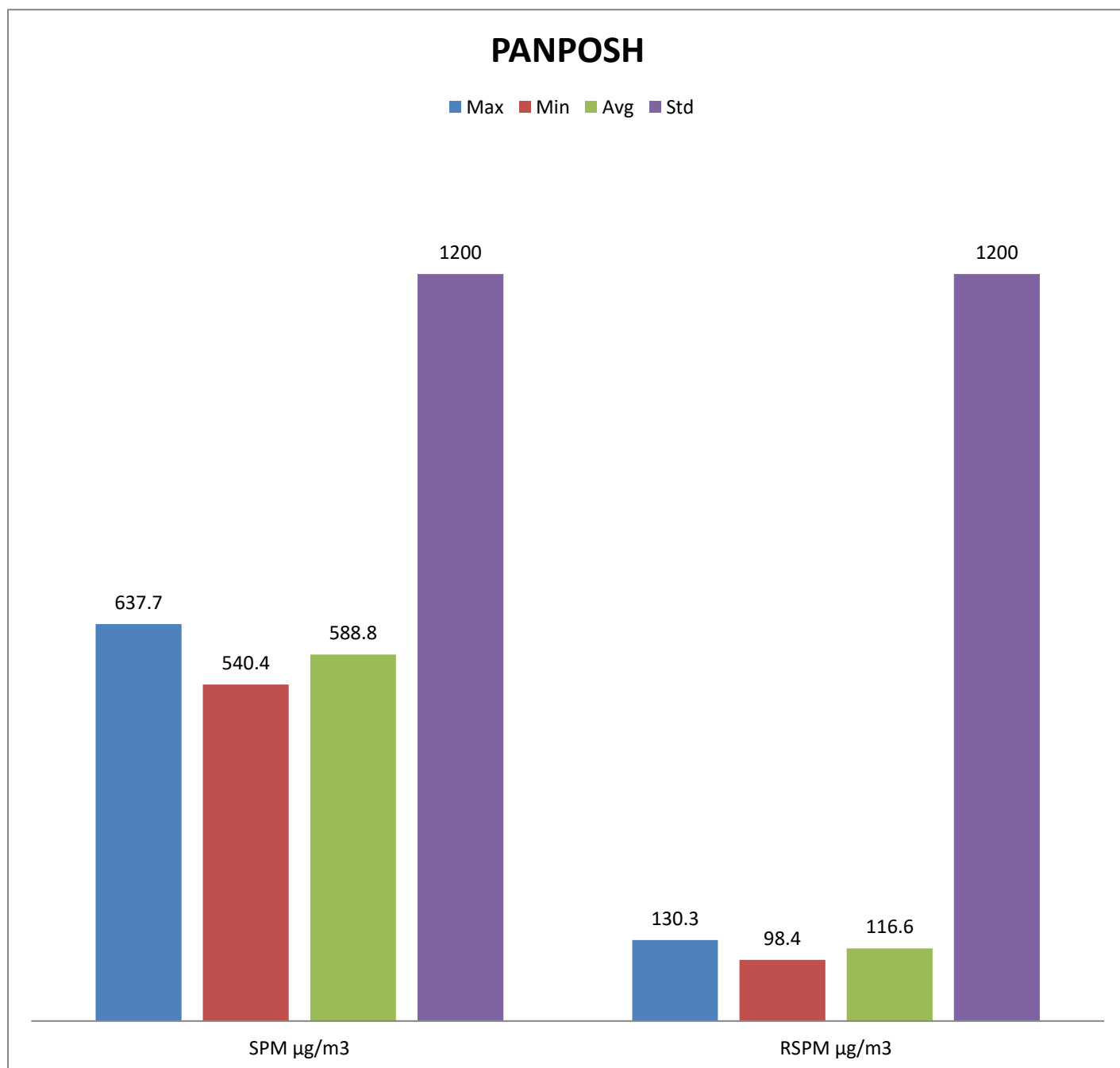
The Summarized results of Work Zone Air Quality/Fugitive Dust Emission for the month of August-2025 are given in the Table below

Table No. 3.2: Summarized Results of Work Zone Air Quality/Fugitive Dust Emission

Sl. No.	Location Name	Station Code	SPM $\mu\text{g}/\text{m}^3$			RSPM $\mu\text{g}/\text{m}^3$		
			Max.	Min.	Avg.	Max.	Min	Avg.
1.	Panposh	F1	637.7	540.4	588.8	130.3	98.4	116.6
2.	D Area	F2	637.8	540.5	593.2	133.5	103.0	115.0
3.	F Area	F3	639.3	543.8	586.8	129.7	101.0	113.7
4.	G Area	F4	639.4	543.5	587.4	132.2	100.6	115.5
5.	Lump Loading Point (near 600TPH)	F5	638.3	544.9	591.1	129.6	103.4	116.0
6.	Fines Loading (20 Area)	F6	639.9	541.5	587.0	134.3	101.1	115.1
7.	Dump Fines handling route	F7	632.5	541.8	580.4	127.3	99.5	111.8
8.	SSP	F8	637.6	549.0	598.7	132.5	100.8	116.3
9.	Dump Fines Handling Site	F9	635.6	541.0	593.1	130.2	101.9	116.6
10.	Mn Quarry	F10	634.8	540.4	585.4	128.8	104.3	115.3
As Per CTO Std.			1200 $\mu\text{g}/\text{m}^3$					

3.2.1 Panposh (F1):

The pollution level in Panposh Quarry for the parameters SPM_{and} RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **637.7** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **540.4** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **98.4** $\mu\text{g}/\text{m}^3$ to **130.3** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/166

Test Report Issue date: 02.09.2025

FUGITIVE EMISSION MONITORING REPORT FOR AUGUST 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **Panposh**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM $\mu\text{g}/\text{m}^3$	RSPM $\mu\text{g}/\text{m}^3$
1.	01-08-2025	Panposh	552.6	112.0
2.	02-08-2025	Panposh	621.9	112.5
3.	03-08-2025	Panposh	548.4	110.6
4.	04-08-2025	Panposh	546.1	114.1
5.	05-08-2025	Panposh	560.9	104.1
6.	06-08-2025	Panposh	580.9	109.7
7.	07-08-2025	Panposh	593.9	120.5
8.	08-08-2025	Panposh	637.7	128.7
9.	09-08-2025	Panposh	607.4	116.1
10.	10-08-2025	Panposh	562.5	104.3
11.	11-08-2025	Panposh	578.9	116.5
12.	12-08-2025	Panposh	590.7	116.2
13.	13-08-2025	Panposh	545.0	113.2
14.	14-08-2025	Panposh	578.7	111.2
15.	15-08-2025	Panposh	590.4	119.6
16.	16-08-2025	Panposh	614.3	121.3
17.	17-08-2025	Panposh	636.1	130.3
18.	18-08-2025	Panposh	571.4	115.4
19.	19-08-2025	Panposh	540.4	98.4
20.	20-08-2025	Panposh	573.4	111.8
21.	21-08-2025	Panposh	574.9	117.2
22.	22-08-2025	Panposh	601.6	118.9
23.	23-08-2025	Panposh	633.6	118.1
24.	24-08-2025	Panposh	610.6	123.1
25.	25-08-2025	Panposh	636.5	130.0
26.	26-08-2025	Panposh	542.5	108.3
27.	27-08-2025	Panposh	616.6	121.7
28.	28-08-2025	Panposh	602.6	115.3
29.	29-08-2025	Panposh	581.6	122.1
30.	30-08-2025	Panposh	612.1	127.6
31.	31-08-2025	Panposh	609.7	126.9
Average			588.8	116.6

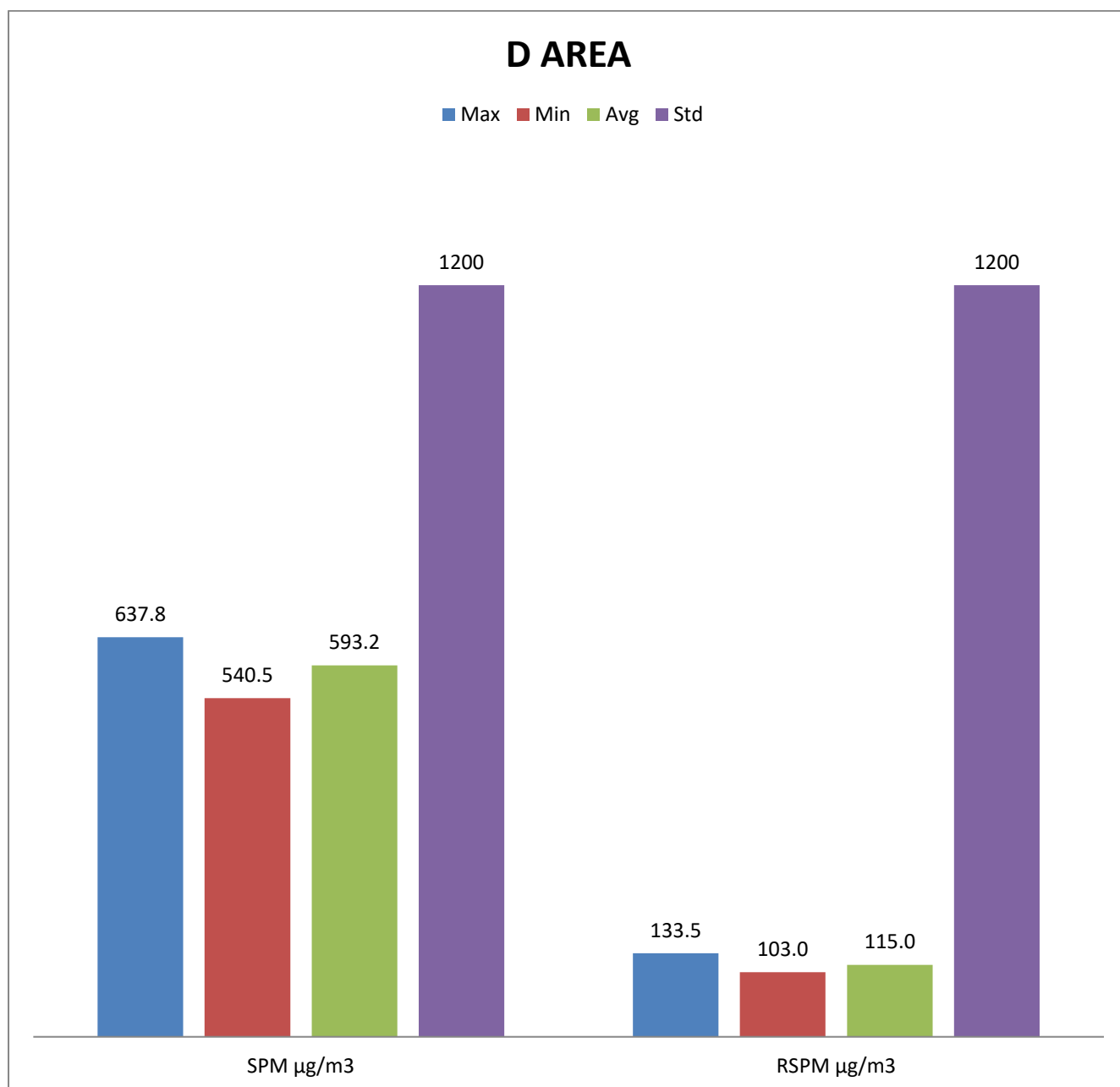
----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

3.2.2 D Area(F2)

The pollution level in D Area Quarry for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **637.8** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **540.5** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **103.0** $\mu\text{g}/\text{m}^3$ to **133.5** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/167

Test Report Issue date: 02.09.2025

FUGITIVE EMISSION MONITORING REPORT FOR AUGUST 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **D Area**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

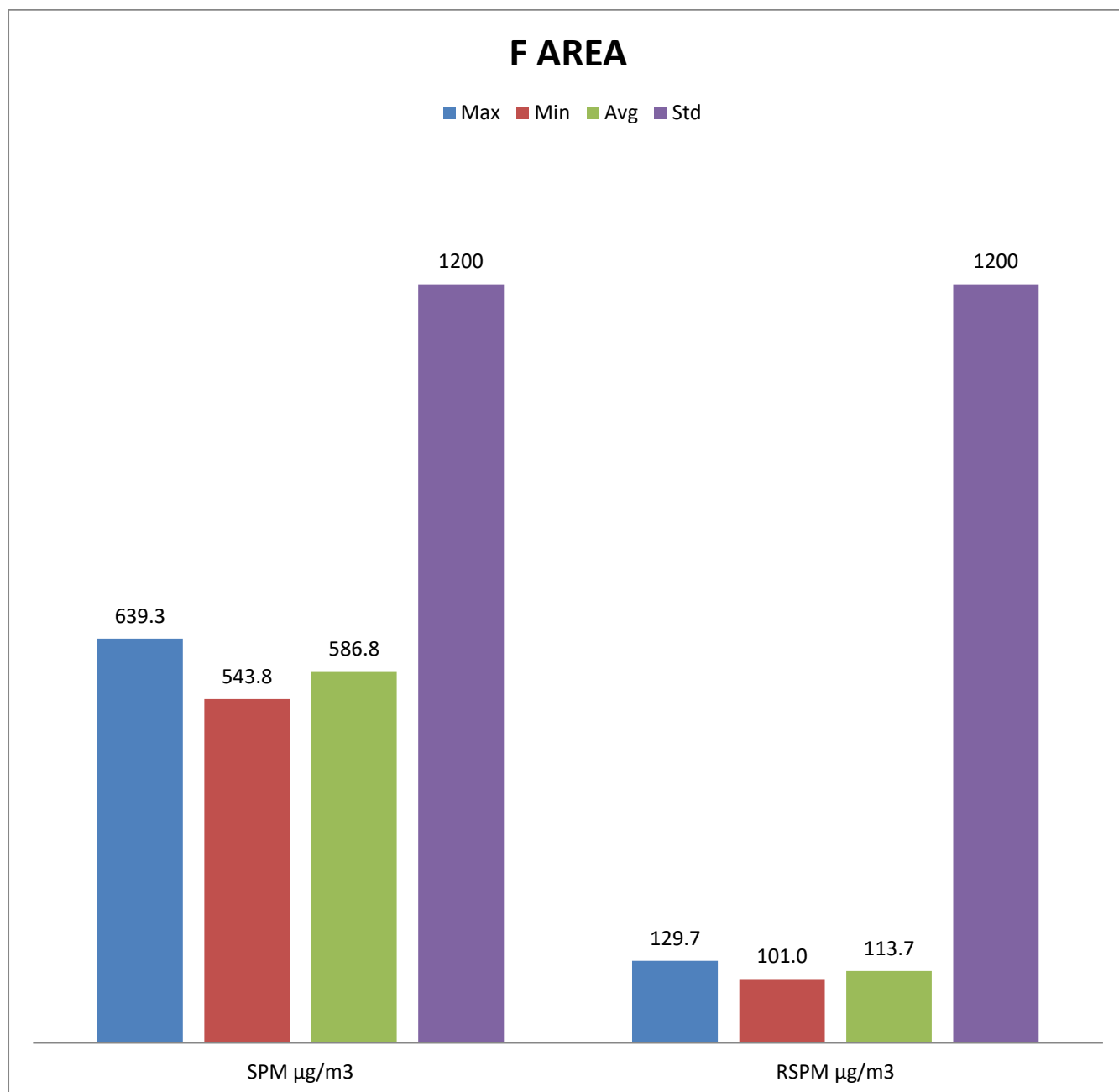
Sl. No.	Date	Sampling Location	Parameter	
			SPM µg/m3	RSPM µg/m3
1.	01-08-2025	D Area	637.8	133.5
2.	02-08-2025	D Area	595.5	116.1
3.	03-08-2025	D Area	541.0	103.6
4.	04-08-2025	D Area	614.5	120.9
5.	05-08-2025	D Area	569.6	103.4
6.	06-08-2025	D Area	614.1	115.4
7.	07-08-2025	D Area	565.0	104.9
8.	08-08-2025	D Area	625.4	129.2
9.	09-08-2025	D Area	620.5	124.0
10.	10-08-2025	D Area	585.0	119.8
11.	11-08-2025	D Area	575.3	106.3
12.	12-08-2025	D Area	612.9	113.6
13.	13-08-2025	D Area	592.9	116.1
14.	14-08-2025	D Area	626.3	127.9
15.	15-08-2025	D Area	564.4	114.9
16.	16-08-2025	D Area	560.2	114.7
17.	17-08-2025	D Area	634.6	122.6
18.	18-08-2025	D Area	622.8	123.1
19.	19-08-2025	D Area	540.5	107.0
20.	20-08-2025	D Area	570.8	103.0
21.	21-08-2025	D Area	586.0	115.5
22.	22-08-2025	D Area	628.6	116.5
23.	23-08-2025	D Area	602.8	108.8
24.	24-08-2025	D Area	623.8	118.4
25.	25-08-2025	D Area	571.9	110.3
26.	26-08-2025	D Area	587.8	107.3
27.	27-08-2025	D Area	580.8	120.0
28.	28-08-2025	D Area	604.0	124.1
29.	29-08-2025	D Area	571.0	109.8
30.	30-08-2025	D Area	551.5	105.6
31.	31-08-2025	D Area	611.3	110.1
Average			593.2	115.0


 Authorized By

 Technical Manager
 (Dr. Midhun G)

3.2.3 F Area(F3)

The pollution level in F Area Quarry for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **639.3** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **543.8** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **101.0** $\mu\text{g}/\text{m}^3$ to **129.7** $\mu\text{g}/\text{m}^3$ during the month



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/168

Test Report Issue date: 02.09.2025

FUGITIVE EMISSION MONITORING REPORT FOR AUGUST 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **F Area**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM µg/m ³	RSPM µg/m ³
1.	01-08-2025	F Area	586.8	109.1
2.	02-08-2025	F Area	585.8	122.1
3.	03-08-2025	F Area	565.3	111.1
4.	04-08-2025	F Area	559.9	112.2
5.	05-08-2025	F Area	545.9	109.1
6.	06-08-2025	F Area	638.6	128.4
7.	07-08-2025	F Area	566.6	104.6
8.	08-08-2025	F Area	627.2	119.7
9.	09-08-2025	F Area	605.3	111.7
10.	10-08-2025	F Area	611.8	119.0
11.	11-08-2025	F Area	582.3	118.7
12.	12-08-2025	F Area	561.0	105.9
13.	13-08-2025	F Area	639.3	119.2
14.	14-08-2025	F Area	590.2	106.7
15.	15-08-2025	F Area	614.4	111.5
16.	16-08-2025	F Area	582.8	105.0
17.	17-08-2025	F Area	563.4	116.0
18.	18-08-2025	F Area	584.9	116.7
19.	19-08-2025	F Area	613.0	125.8
20.	20-08-2025	F Area	572.5	109.7
21.	21-08-2025	F Area	550.4	101.0
22.	22-08-2025	F Area	612.3	123.6
23.	23-08-2025	F Area	559.4	111.9
24.	24-08-2025	F Area	544.4	101.8
25.	25-08-2025	F Area	558.0	108.7
26.	26-08-2025	F Area	561.8	106.2
27.	27-08-2025	F Area	630.0	129.7
28.	28-08-2025	F Area	543.8	112.5
29.	29-08-2025	F Area	598.7	114.7
30.	30-08-2025	F Area	636.6	122.9
31.	31-08-2025	F Area	599.6	109.8
Average			586.8	113.7

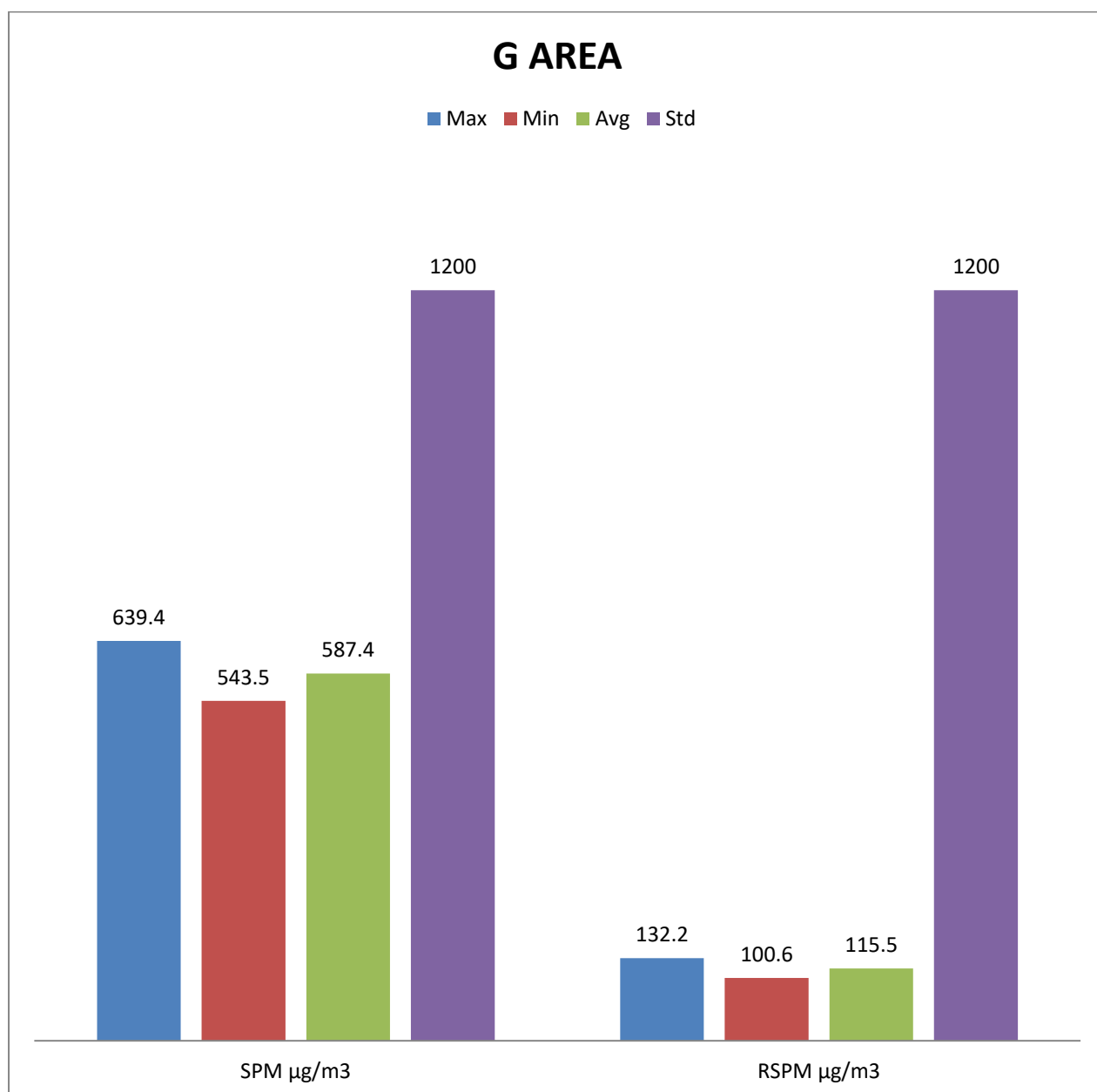
----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

3.2.4 G Area(F4)

The pollution level in G Area Quarry for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **639.4** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **543.5** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **100.6** $\mu\text{g}/\text{m}^3$ to **132.2** $\mu\text{g}/\text{m}^3$ during the month



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/169

Test Report Issue date: 02.09.2025

FUGITIVE EMISSION MONITORING REPORT FOR AUGUST 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **G Area**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM µg/m ³	RSPM µg/m ³
1.	01-08-2025	G Area	560.5	103.0
2.	02-08-2025	G Area	544.0	109.3
3.	03-08-2025	G Area	625.3	122.4
4.	04-08-2025	G Area	588.6	120.1
5.	05-08-2025	G Area	639.4	121.3
6.	06-08-2025	G Area	598.1	125.4
7.	07-08-2025	G Area	628.5	130.3
8.	08-08-2025	G Area	598.4	118.9
9.	09-08-2025	G Area	549.7	113.0
10.	10-08-2025	G Area	560.8	113.3
11.	11-08-2025	G Area	621.8	113.8
12.	12-08-2025	G Area	636.1	132.2
13.	13-08-2025	G Area	585.4	116.9
14.	14-08-2025	G Area	628.0	128.3
15.	15-08-2025	G Area	615.8	114.7
16.	16-08-2025	G Area	551.4	108.6
17.	17-08-2025	G Area	587.8	119.9
18.	18-08-2025	G Area	605.2	120.8
19.	19-08-2025	G Area	581.1	109.3
20.	20-08-2025	G Area	544.6	100.6
21.	21-08-2025	G Area	602.8	114.7
22.	22-08-2025	G Area	579.4	116.6
23.	23-08-2025	G Area	564.8	109.0
24.	24-08-2025	G Area	616.6	125.4
25.	25-08-2025	G Area	576.5	121.0
26.	26-08-2025	G Area	569.5	108.0
27.	27-08-2025	G Area	566.7	110.0
28.	28-08-2025	G Area	560.1	107.6
29.	29-08-2025	G Area	590.6	111.1
30.	30-08-2025	G Area	543.5	101.8
31.	31-08-2025	G Area	588.9	112.7
Average			587.4	115.5

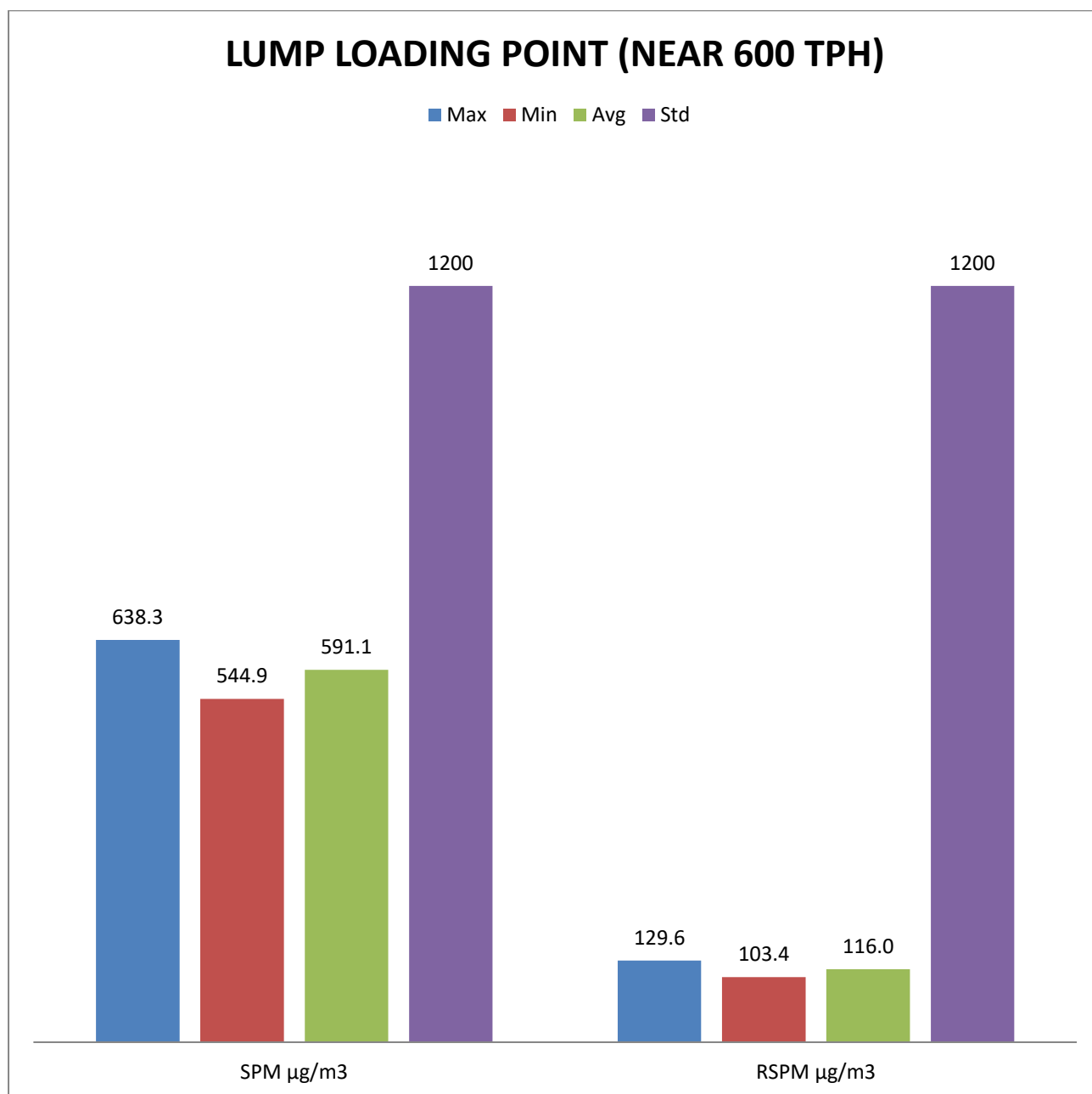
----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

3.2.5 Lump Loading Point (Near 600 TPH) (F5)

The pollution level in Lump Loading Point (Near 600 TPH) for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **638.3** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **544.9** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **103.4** $\mu\text{g}/\text{m}^3$ to **129.6** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/170

Test Report Issue date: 02.09.2025

FUGITIVE EMISSION MONITORING REPORT FOR AUGUST 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **Lump Loading Point (Near 600 TPH)**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM $\mu\text{g}/\text{m}^3$	RSPM $\mu\text{g}/\text{m}^3$
1.	01-08-2025	Lump Loading Point (Near 600 TPH)	637.5	126.9
2.	02-08-2025	Lump Loading Point (Near 600 TPH)	584.1	113.3
3.	03-08-2025	Lump Loading Point (Near 600 TPH)	579.5	105.6
4.	04-08-2025	Lump Loading Point (Near 600 TPH)	585.3	121.9
5.	05-08-2025	Lump Loading Point (Near 600 TPH)	553.1	112.8
6.	06-08-2025	Lump Loading Point (Near 600 TPH)	613.4	128.0
7.	07-08-2025	Lump Loading Point (Near 600 TPH)	577.3	119.3
8.	08-08-2025	Lump Loading Point (Near 600 TPH)	567.1	104.9
9.	09-08-2025	Lump Loading Point (Near 600 TPH)	636.3	129.6
10.	10-08-2025	Lump Loading Point (Near 600 TPH)	572.7	103.4
11.	11-08-2025	Lump Loading Point (Near 600 TPH)	553.7	113.4
12.	12-08-2025	Lump Loading Point (Near 600 TPH)	588.0	112.9
13.	13-08-2025	Lump Loading Point (Near 600 TPH)	564.7	112.3
14.	14-08-2025	Lump Loading Point (Near 600 TPH)	568.5	114.5
15.	15-08-2025	Lump Loading Point (Near 600 TPH)	571.7	115.2
16.	16-08-2025	Lump Loading Point (Near 600 TPH)	606.1	111.9
17.	17-08-2025	Lump Loading Point (Near 600 TPH)	607.5	118.2
18.	18-08-2025	Lump Loading Point (Near 600 TPH)	623.2	122.2
19.	19-08-2025	Lump Loading Point (Near 600 TPH)	638.3	128.9
20.	20-08-2025	Lump Loading Point (Near 600 TPH)	604.9	122.9
21.	21-08-2025	Lump Loading Point (Near 600 TPH)	544.9	113.1
22.	22-08-2025	Lump Loading Point (Near 600 TPH)	577.5	106.5
23.	23-08-2025	Lump Loading Point (Near 600 TPH)	608.9	115.0
24.	24-08-2025	Lump Loading Point (Near 600 TPH)	581.4	111.4
25.	25-08-2025	Lump Loading Point (Near 600 TPH)	553.0	106.9
26.	26-08-2025	Lump Loading Point (Near 600 TPH)	636.8	114.9
27.	27-08-2025	Lump Loading Point (Near 600 TPH)	620.7	125.0
28.	28-08-2025	Lump Loading Point (Near 600 TPH)	589.4	106.8
29.	29-08-2025	Lump Loading Point (Near 600 TPH)	557.4	104.2
30.	30-08-2025	Lump Loading Point (Near 600 TPH)	599.7	124.5
31.	31-08-2025	Lump Loading Point (Near 600 TPH)	620.3	128.2
Average			591.1	116.0

----End of Report----


 Authorized By

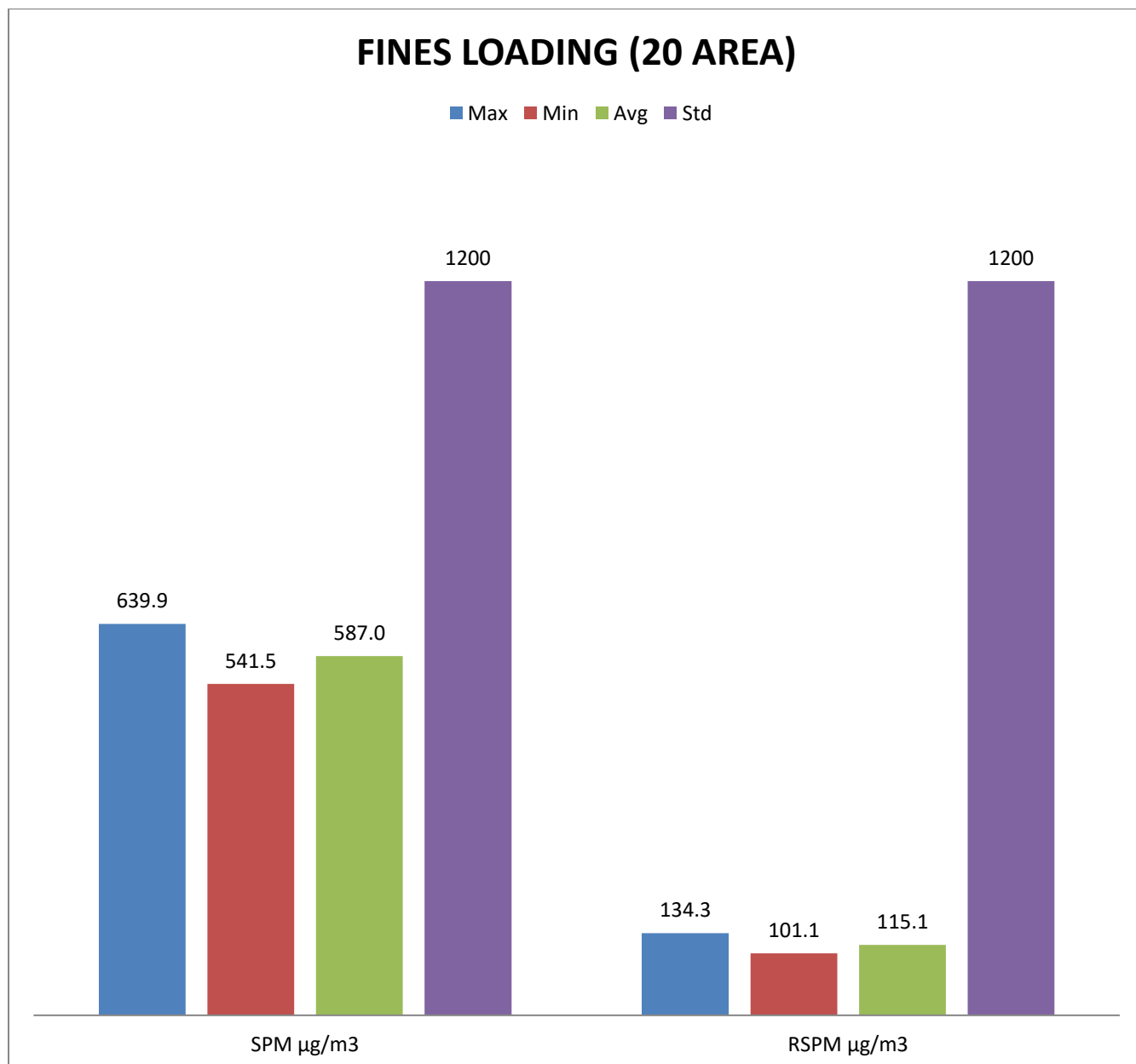
 Technical Manager
 (Dr. Midhun G)

(Vikas Kumar)

(Abhishek Kumar Singh)

3.2.6 Fines Loading (20 area) (F6)

The pollution level in Fines Loading (20 area) for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **639.9** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **541.5** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **101.1** $\mu\text{g}/\text{m}^3$ to **134.3** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/171

Test Report Issue date: 02.09.2025

FUGITIVE EMISSION MONITORING REPORT FOR AUGUST 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **Fines Loading (20 area)**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM µg/m3	RSPM µg/m3
1.	01-08-2025	Fines Loading (20 area)	541.6	112.0
2.	02-08-2025	Fines Loading (20 area)	541.5	101.6
3.	03-08-2025	Fines Loading (20 area)	637.5	120.2
4.	04-08-2025	Fines Loading (20 area)	639.9	134.1
5.	05-08-2025	Fines Loading (20 area)	630.3	124.0
6.	06-08-2025	Fines Loading (20 area)	585.3	114.8
7.	07-08-2025	Fines Loading (20 area)	544.9	109.4
8.	08-08-2025	Fines Loading (20 area)	595.4	109.0
9.	09-08-2025	Fines Loading (20 area)	596.4	113.4
10.	10-08-2025	Fines Loading (20 area)	639.8	134.3
11.	11-08-2025	Fines Loading (20 area)	576.6	105.6
12.	12-08-2025	Fines Loading (20 area)	574.2	109.7
13.	13-08-2025	Fines Loading (20 area)	587.2	109.0
14.	14-08-2025	Fines Loading (20 area)	564.2	115.2
15.	15-08-2025	Fines Loading (20 area)	554.0	114.5
16.	16-08-2025	Fines Loading (20 area)	560.8	108.3
17.	17-08-2025	Fines Loading (20 area)	630.3	115.0
18.	18-08-2025	Fines Loading (20 area)	555.0	113.5
19.	19-08-2025	Fines Loading (20 area)	561.0	108.1
20.	20-08-2025	Fines Loading (20 area)	611.6	110.1
21.	21-08-2025	Fines Loading (20 area)	637.6	133.9
22.	22-08-2025	Fines Loading (20 area)	618.4	118.0
23.	23-08-2025	Fines Loading (20 area)	551.9	110.7
24.	24-08-2025	Fines Loading (20 area)	571.5	114.3
25.	25-08-2025	Fines Loading (20 area)	566.3	118.5
26.	26-08-2025	Fines Loading (20 area)	546.3	101.1
27.	27-08-2025	Fines Loading (20 area)	637.2	132.6
28.	28-08-2025	Fines Loading (20 area)	630.9	113.9
29.	29-08-2025	Fines Loading (20 area)	592.5	123.1
30.	30-08-2025	Fines Loading (20 area)	570.5	107.4
31.	31-08-2025	Fines Loading (20 area)	547.1	111.3
Average			587.0	115.1

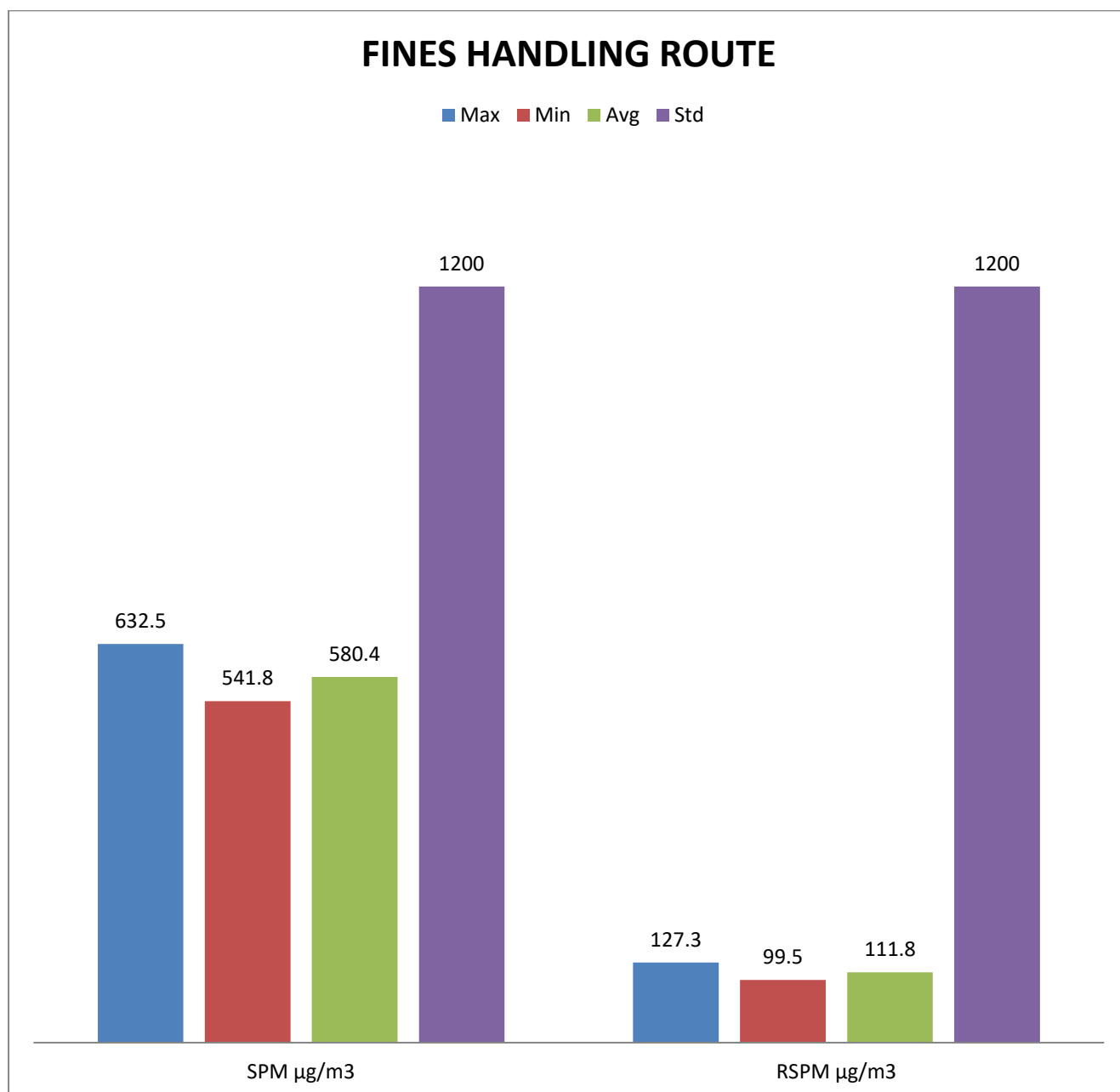
----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

3.2.7 Fines Handling Route (F7)

The pollution level in Fines Handling Route for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **632.5** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **541.8** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **99.5** $\mu\text{g}/\text{m}^3$ to **127.3** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/172

Test Report Issue date: 02.09.2025

FUGITIVE EMISSION MONITORING REPORT FOR AUGUST 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **Fines Handling Route**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM $\mu\text{g}/\text{m}^3$	RSPM $\mu\text{g}/\text{m}^3$
1.	01-08-2025	Fines Handling Route	568.4	106.1
2.	02-08-2025	Fines Handling Route	571.3	108.9
3.	03-08-2025	Fines Handling Route	605.4	123.9
4.	04-08-2025	Fines Handling Route	597.2	115.0
5.	05-08-2025	Fines Handling Route	574.1	108.3
6.	06-08-2025	Fines Handling Route	632.5	115.3
7.	07-08-2025	Fines Handling Route	575.4	117.9
8.	08-08-2025	Fines Handling Route	557.9	115.9
9.	09-08-2025	Fines Handling Route	552.8	109.1
10.	10-08-2025	Fines Handling Route	563.0	114.2
11.	11-08-2025	Fines Handling Route	573.3	105.0
12.	12-08-2025	Fines Handling Route	574.8	106.5
13.	13-08-2025	Fines Handling Route	614.9	110.9
14.	14-08-2025	Fines Handling Route	550.9	103.3
15.	15-08-2025	Fines Handling Route	606.6	109.5
16.	16-08-2025	Fines Handling Route	568.9	103.9
17.	17-08-2025	Fines Handling Route	566.8	117.1
18.	18-08-2025	Fines Handling Route	543.1	102.2
19.	19-08-2025	Fines Handling Route	612.1	123.4
20.	20-08-2025	Fines Handling Route	619.5	114.1
21.	21-08-2025	Fines Handling Route	591.9	108.3
22.	22-08-2025	Fines Handling Route	619.8	127.3
23.	23-08-2025	Fines Handling Route	555.0	102.8
24.	24-08-2025	Fines Handling Route	544.3	103.7
25.	25-08-2025	Fines Handling Route	598.8	112.9
26.	26-08-2025	Fines Handling Route	603.7	126.6
27.	27-08-2025	Fines Handling Route	570.4	115.3
28.	28-08-2025	Fines Handling Route	610.4	116.4
29.	29-08-2025	Fines Handling Route	541.8	111.0
30.	30-08-2025	Fines Handling Route	577.1	110.8
31.	31-08-2025	Fines Handling Route	550.8	99.5
Average			580.4	111.8

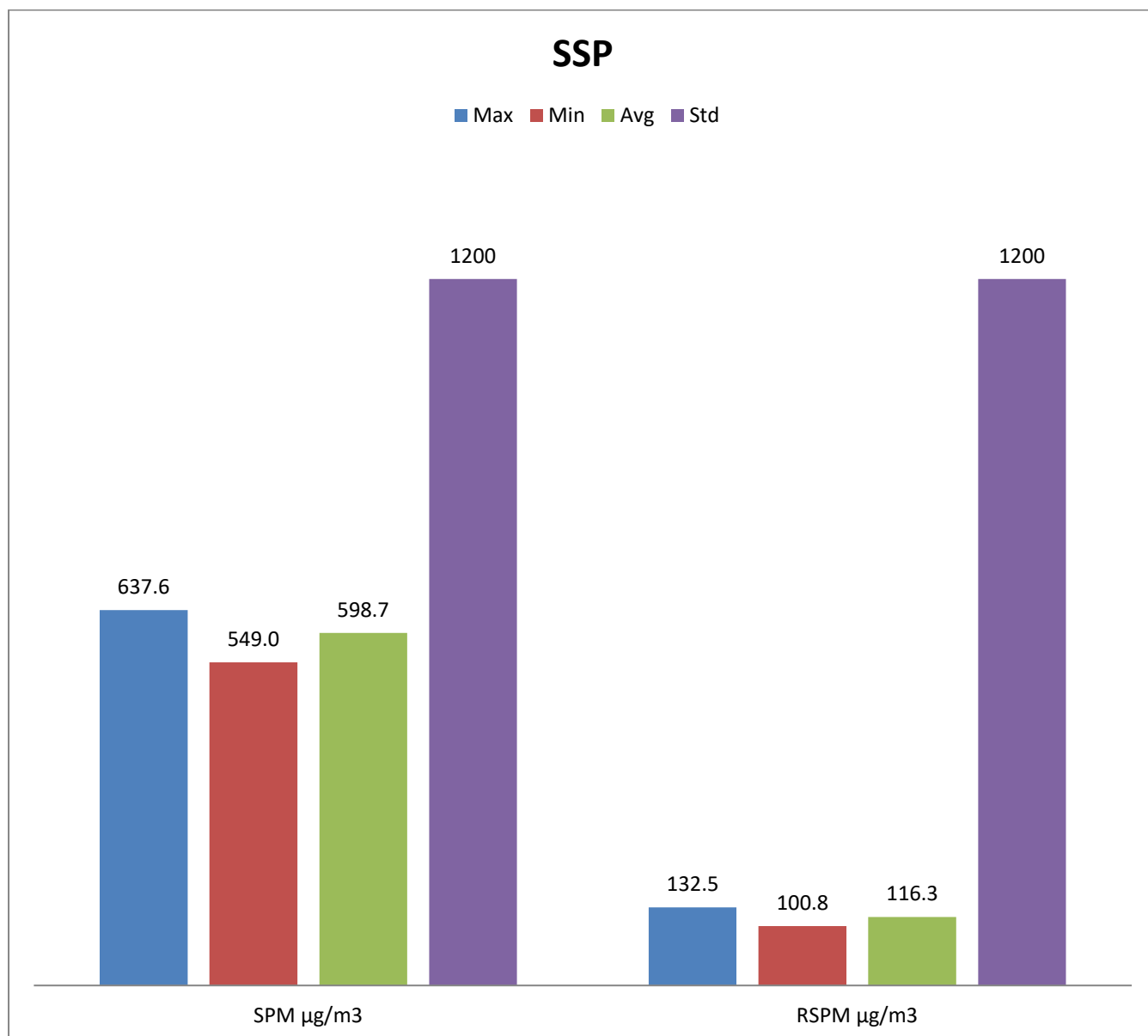
----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

3.2.8 SSP (F8)

The pollution level in SSP Quarry for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **637.6** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **549.0** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **100.8** $\mu\text{g}/\text{m}^3$ to **132.5** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/173

Test Report Issue date: 02.09.2025

FUGITIVE EMISSION MONITORING REPORT FOR AUGUST 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **SSP**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM µg/m ³	RSPM µg/m ³
1.	01-08-2025	SSP	549.0	101.1
2.	02-08-2025	SSP	619.6	117.4
3.	03-08-2025	SSP	585.6	118.8
4.	04-08-2025	SSP	574.2	107.1
5.	05-08-2025	SSP	581.9	106.7
6.	06-08-2025	SSP	631.0	128.2
7.	07-08-2025	SSP	559.9	111.5
8.	08-08-2025	SSP	555.8	104.0
9.	09-08-2025	SSP	606.0	121.5
10.	10-08-2025	SSP	623.8	122.8
11.	11-08-2025	SSP	588.3	123.3
12.	12-08-2025	SSP	553.8	102.6
13.	13-08-2025	SSP	585.6	112.0
14.	14-08-2025	SSP	619.5	118.3
15.	15-08-2025	SSP	624.7	130.0
16.	16-08-2025	SSP	617.3	113.9
17.	17-08-2025	SSP	566.0	104.9
18.	18-08-2025	SSP	624.8	123.3
19.	19-08-2025	SSP	619.1	113.0
20.	20-08-2025	SSP	558.4	100.8
21.	21-08-2025	SSP	597.1	117.7
22.	22-08-2025	SSP	562.9	112.4
23.	23-08-2025	SSP	561.2	103.3
24.	24-08-2025	SSP	633.7	132.1
25.	25-08-2025	SSP	629.2	119.4
26.	26-08-2025	SSP	635.1	117.8
27.	27-08-2025	SSP	637.6	132.5
28.	28-08-2025	SSP	606.3	111.8
29.	29-08-2025	SSP	606.3	125.8
30.	30-08-2025	SSP	619.6	119.9
31.	31-08-2025	SSP	627.2	130.0
Average			598.7	116.3

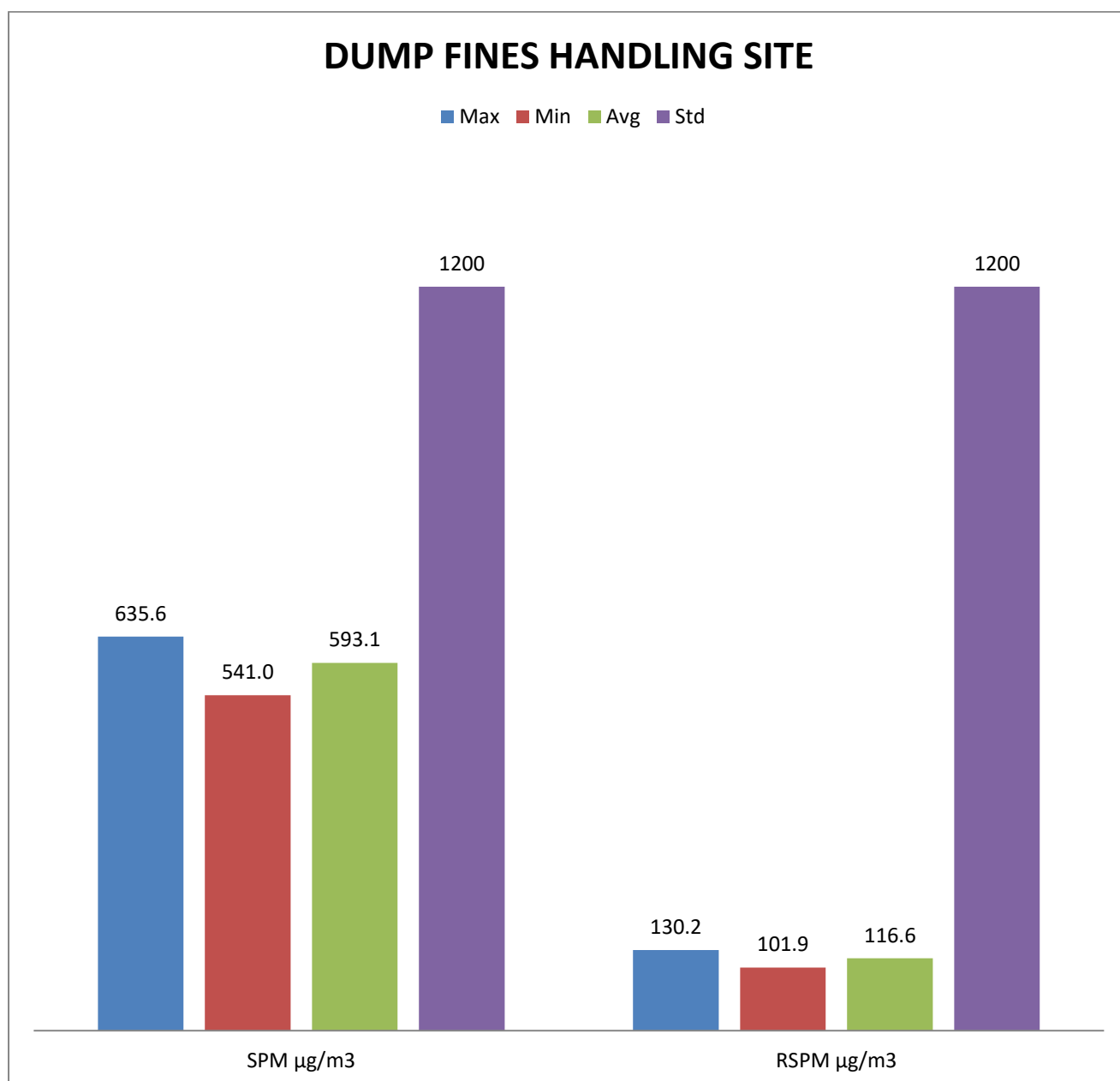
----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

3.2.9 Dump Fines Handling Site (F9)

The pollution level in Dump Fines Handling Site for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **635.6** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **541.0** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **101.9** $\mu\text{g}/\text{m}^3$ to **130.2** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/174

Test Report Issue date: 02.09.2025

FUGITIVE EMISSION MONITORING REPORT FOR AUGUST 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **Dump Fines Handling Site**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM $\mu\text{g}/\text{m}^3$	RSPM $\mu\text{g}/\text{m}^3$
1.	01-08-2025	Dump Fines Handling Site	597.7	109.9
2.	02-08-2025	Dump Fines Handling Site	572.4	109.3
3.	03-08-2025	Dump Fines Handling Site	568.4	111.0
4.	04-08-2025	Dump Fines Handling Site	616.8	119.3
5.	05-08-2025	Dump Fines Handling Site	617.1	116.5
6.	06-08-2025	Dump Fines Handling Site	620.6	130.2
7.	07-08-2025	Dump Fines Handling Site	605.0	119.0
8.	08-08-2025	Dump Fines Handling Site	600.6	113.2
9.	09-08-2025	Dump Fines Handling Site	635.6	125.9
10.	10-08-2025	Dump Fines Handling Site	605.2	120.9
11.	11-08-2025	Dump Fines Handling Site	595.6	125.0
12.	12-08-2025	Dump Fines Handling Site	586.4	117.0
13.	13-08-2025	Dump Fines Handling Site	602.1	120.1
14.	14-08-2025	Dump Fines Handling Site	583.2	113.0
15.	15-08-2025	Dump Fines Handling Site	589.3	110.4
16.	16-08-2025	Dump Fines Handling Site	607.9	118.6
17.	17-08-2025	Dump Fines Handling Site	583.3	109.8
18.	18-08-2025	Dump Fines Handling Site	557.7	101.9
19.	19-08-2025	Dump Fines Handling Site	609.0	120.1
20.	20-08-2025	Dump Fines Handling Site	541.0	112.8
21.	21-08-2025	Dump Fines Handling Site	542.2	111.1
22.	22-08-2025	Dump Fines Handling Site	589.4	113.0
23.	23-08-2025	Dump Fines Handling Site	613.3	126.2
24.	24-08-2025	Dump Fines Handling Site	585.9	117.3
25.	25-08-2025	Dump Fines Handling Site	592.1	119.0
26.	26-08-2025	Dump Fines Handling Site	581.0	106.2
27.	27-08-2025	Dump Fines Handling Site	592.0	113.5
28.	28-08-2025	Dump Fines Handling Site	556.7	115.2
29.	29-08-2025	Dump Fines Handling Site	621.7	126.8
30.	30-08-2025	Dump Fines Handling Site	584.0	112.6
31.	31-08-2025	Dump Fines Handling Site	634.2	129.2
Average			590.2	115.8

----End of Report----

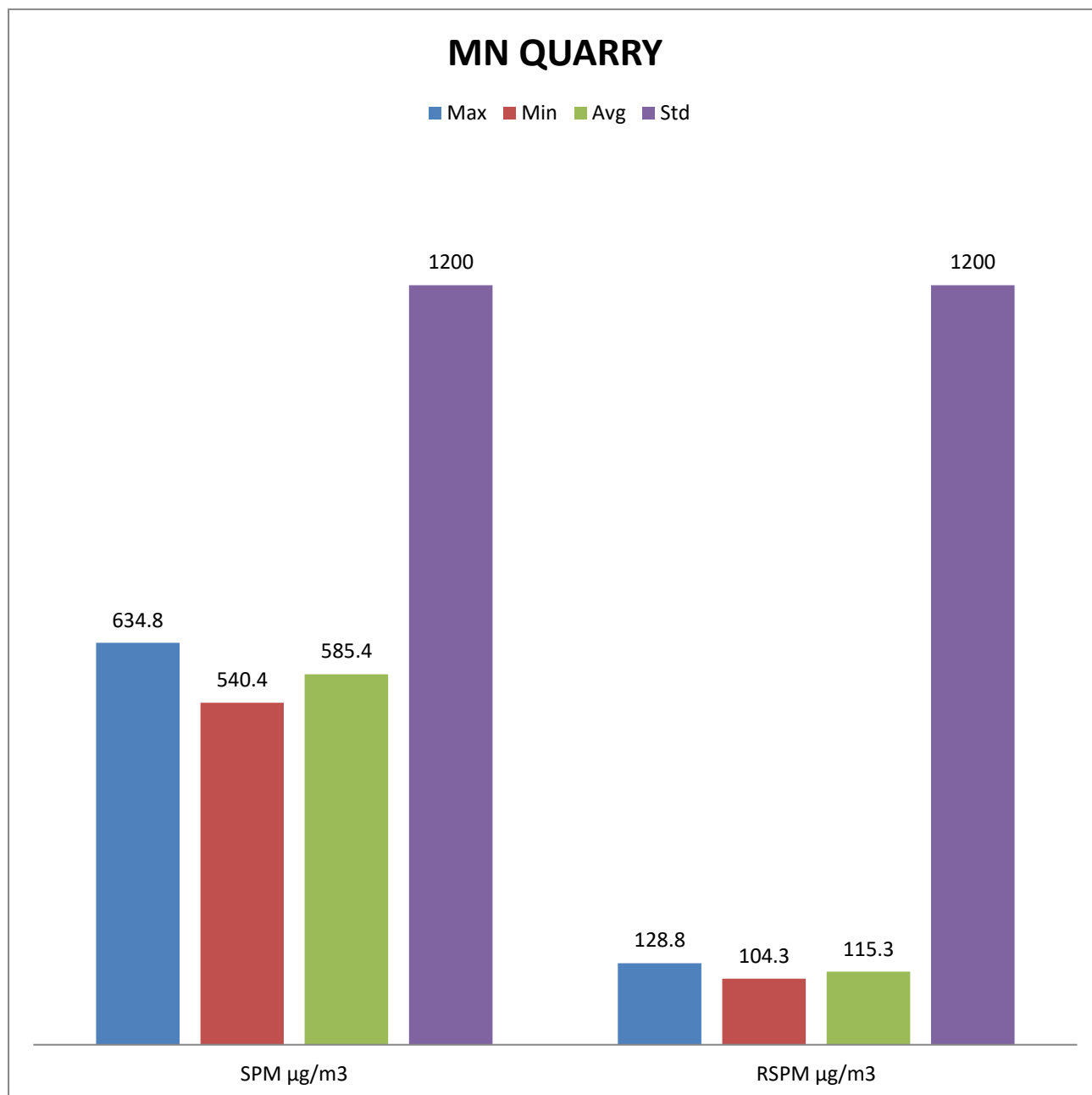


Authorized By

Technical Manager
(Dr. Midhun G)

3.2.10 Mn Quarry (F5)

The pollution level in Mn Quarry for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **634.8** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **540.4** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **104.3** $\mu\text{g}/\text{m}^3$ to **128.8** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/175

Test Report Issue date: 02.09.2025

FUGITIVE EMISSION MONITORING REPORT FOR AUGUST 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **Mn Quarry**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM $\mu\text{g}/\text{m}^3$	RSPM $\mu\text{g}/\text{m}^3$
1.	01-08-2025	Mn Quarry	628.6	113.9
2.	02-08-2025	Mn Quarry	568.6	104.3
3.	03-08-2025	Mn Quarry	586.1	106.0
4.	04-08-2025	Mn Quarry	540.4	113.4
5.	05-08-2025	Mn Quarry	566.5	110.5
6.	06-08-2025	Mn Quarry	544.3	106.4
7.	07-08-2025	Mn Quarry	582.4	121.3
8.	08-08-2025	Mn Quarry	581.3	109.7
9.	09-08-2025	Mn Quarry	591.1	111.4
10.	10-08-2025	Mn Quarry	551.6	108.5
11.	11-08-2025	Mn Quarry	566.9	113.8
12.	12-08-2025	Mn Quarry	594.6	123.4
13.	13-08-2025	Mn Quarry	631.1	128.1
14.	14-08-2025	Mn Quarry	608.4	123.1
15.	15-08-2025	Mn Quarry	563.2	117.8
16.	16-08-2025	Mn Quarry	634.8	122.8
17.	17-08-2025	Mn Quarry	561.7	108.0
18.	18-08-2025	Mn Quarry	618.3	115.8
19.	19-08-2025	Mn Quarry	632.5	121.0
20.	20-08-2025	Mn Quarry	550.3	106.8
21.	21-08-2025	Mn Quarry	584.8	116.3
22.	22-08-2025	Mn Quarry	582.8	116.5
23.	23-08-2025	Mn Quarry	580.2	119.5
24.	24-08-2025	Mn Quarry	607.2	120.4
25.	25-08-2025	Mn Quarry	541.5	106.5
26.	26-08-2025	Mn Quarry	628.5	128.8
27.	27-08-2025	Mn Quarry	606.5	117.8
28.	28-08-2025	Mn Quarry	581.0	119.1
29.	29-08-2025	Mn Quarry	575.4	120.2
30.	30-08-2025	Mn Quarry	608.2	114.2
31.	31-08-2025	Mn Quarry	550.1	110.3
Average			585.4	115.3

----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

3.3 Surface/Effluent/Drinking Water Quality:

As per the guideline of CPCB, the following criteria shall be taken into consideration for use of the surface water bodies. Reports below shows the surface water quality analysis results at identified locations near the ML area.

Designated-Best-Use	Class of water	Criteria
Drinking Water Source without conventional treatment but after disinfection	A	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 50 or less pH between 6.5 and 8.5 Dissolved Oxygen 6mg/l or more Biochemical Oxygen Demand 5 days 20C 2mg/l or less
Outdoor bathing (Organized)	B	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 500 or less pH between 6.5 and 8.5 Dissolved Oxygen 5mg/l or more Biochemical Oxygen Demand 5 days 20C 3mg/l or less
Drinking water source after conventional treatment and disinfection	C	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 5000 or less pH between 6 to 9 Dissolved Oxygen 4mg/l or more Biochemical Oxygen Demand 5 days 20C 3mg/l or less
Propagation of Wild life and Fisheries	D	<ul style="list-style-type: none"> pH between 6.5 to 8.5 Dissolved Oxygen 4mg/l or more Free Ammonia (as N) 1.2 mg/l or less
Irrigation, Industrial Cooling, Controlled Waste disposal	E	<ul style="list-style-type: none"> pH between 6.0 to 8.5 Electrical Conductivity at 25C micro mhos/cm Max. 2250 Sodium absorption Ratio Max. 26 Boron Max. 2mg/l
	Below-E	Not Meeting A, B, C, D & E Criteria

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0088/0380/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Surface Water		
Sample Registration No.	0088	Name of Location	Karo Near Lease Boundary at Limture Village
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0380/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	IS 3025(Part-11)	2 - 12	7.28	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA,24th Ed. :2023,2540-D	5 -5000	30.0	-
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	1 -1000	28.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA, 23rd Ed. :2017,5210 B	1 -1000	2.8	3.0
5.	Fluoride as F	mg/l	APHA, 24th Ed.:2023 4500-F D	0.05 -10	0.12	1.5
6.	Nitrate Nitrogen	mg/l	IS 3025 (Part-34)	5-100	<5	50
7.	Arsenic as As	mg/l	APHA, 24th Ed.: 2023,3125-B	0.01-2	<0.01	0.2
8.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025 (Part-52, Clause No-6)	0.05-20	<0.05	0.05
9.	Iron as Fe	mg/l	IS 3025 (Part-53, Clause No-6)	0.02-50	0.14	3.0
10.	Copper as Cu	mg/l	APHA, 24th Ed.: 2023,3125-B	0.05-5	<0.05	1.5
11.	Zinc as Zn	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-50	0.08	15.0
12.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.05	0.005
13.	Sulphide as S ²⁻	mg/l	IS 3025 (Part-29, Clause No-5)	0.05-10	<0.05	-
14.	Mercury as Hg	mg/l	APHA, 24th Ed.: 2023,3125-B	0.001-1	<0.001	-
15.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	-
16.	Lead as Pb	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.01-1	<0.01	0.1
17.	Cadmium as Cd	mg/l	APHA, 24th Ed.: 2023,3125-B	0.002-2	<0.002	0.01
18.	Nickel as Ni	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-10	<0.02	-
19.	Oil & Grease as O&G	mg/l	IS 3025 (Part-39, Clause No-5)	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part-26, Clause No-5)	0.5-10	<0.5	0.2
21.	Cyanide as CN ⁻	mg/l	APHA, 24th Ed:2023:2017, 4500-CN(K)	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----



Authorized By

Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0088/0381/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Surface Water		
Sample Registration No.	0088	Name of Location	Jhikaria Nalla before Joining Karo River
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0381/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	IS 3025(Part-11)	2 - 12	7.49	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA,24th Ed. :2023,2540-D	5 -5000	18.0	-
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	1 -1000	20.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA, 23rd Ed. :2017,5210 B	1 -1000	2.4	3.0
5.	Fluoride as F	mg/l	APHA, 24th Ed.:2023 4500-F D	0.05 -10	0.12	1.5
6.	Nitrate Nitrogen	mg/l	IS 3025 (Part-34)	5-100	6.12	50
7.	Arsenic as As	mg/l	APHA, 24th Ed.: 2023,3125-B	0.01-2	<0.01	0.2
8.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025 (Part-52, Clause No-6)	0.05-20	<0.05	0.05
9.	Iron as Fe	mg/l	IS 3025 (Part-53, Clause No-6)	0.02-50	0.15	3.0
10.	Copper as Cu	mg/l	APHA, 24th Ed.: 2023,3125-B	0.05-5	<0.05	1.5
11.	Zinc as Zn	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-50	0.07	15.0
12.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.05	0.005
13.	Sulfide as S ²⁻	mg/l	IS 3025 (Part-29, Clause No-5)	0.05-10	<0.05	-
14.	Mercury as Hg	mg/l	APHA, 24th Ed.: 2023,3125-B	0.001-1	<0.001	-
15.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	-
16.	Lead as Pb	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.01-1	<0.01	0.1
17.	Cadmium as Cd	mg/l	APHA, 24th Ed.: 2023,3125-B	0.002-2	<0.002	0.01
18.	Nickel as Ni	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-10	<0.02	-
19.	Oil & Grease as O&G	mg/l	IS 3025 (Part-39, Clause No-5)	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part-26, Clause No-5)	0.5-10	<0.5	0.2
21.	Cyanide as CN ⁻	mg/l	APHA, 24th Ed:2023:2017, 4500-CN(K)	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Authorized By

Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0088/0382/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Surface Water		
Sample Registration No.	0088	Name of Location	Panpash Nallah
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0382/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	IS 3025(Part-11)	2 - 12	7.50	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA,24th Ed. :2023,2540-D	5 -5000	32.0	-
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	1 -1000	30.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA, 23rd Ed. :2017,5210 B	1 -1000	2.7	3.0
5.	Fluoride as F	mg/l	APHA, 24th Ed.:2023 4500-F D	0.05 -10	0.10	1.5
6.	Nitrate Nitrogen	mg/l	IS 3025 (Part-34)	5-100	6.56	50
7.	Arsenic as As	mg/l	APHA, 24th Ed.: 2023,3125-B	0.01-2	<0.01	0.2
8.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025 (Part-52, Clause No-6)	0.05-20	<0.05	0.05
9.	Iron as Fe	mg/l	IS 3025 (Part-53, Clause No-6)	0.02-50	0.20	3.0
10.	Copper as Cu	mg/l	APHA, 24th Ed.: 2023,3125-B	0.05-5	<0.05	1.5
11.	Zinc as Zn	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-50	0.08	15.0
12.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.05	0.005
13.	Sulfide as S ²⁻	mg/l	IS 3025 (Part-29, Clause No-5)	0.05-10	<0.05	-
14.	Mercury as Hg	mg/l	APHA, 24th Ed.: 2023,3125-B	0.001-1	<0.001	-
15.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	-
16.	Lead as Pb	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.01-1	<0.01	0.1
17.	Cadmium as Cd	mg/l	APHA, 24th Ed.: 2023,3125-B	0.002-2	<0.002	0.01
18.	Nickel as Ni	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-10	<0.02	-
19.	Oil & Grease as O&G	mg/l	IS 3025 (Part-39, Clause No-5)	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part-26, Clause No-5)	0.5-10	<0.5	0.2
21.	Cyanide as CN ⁻	mg/l	APHA, 24th Ed:2023:2017, 4500-CN(K)	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0088/0383/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Surface Water		
Sample Registration No.	0088	Name of Location	Karo River Intake
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0383/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	IS 3025(Part-11)	2 - 12	7.34	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA,24th Ed. :2023,2540-D	5 -5000	36.0	-
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	1 -1000	32.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA, 23rd Ed. :2017,5210 B	1 -1000	2.9	3.0
5.	Fluoride as F	mg/l	APHA, 24th Ed.:2023 4500-F D	0.05 -10	0.08	1.5
6.	Nitrate Nitrogen	mg/l	IS 3025 (Part-34)	5-100	5.86	50
7.	Arsenic as As	mg/l	APHA, 24th Ed.: 2023,3125-B	0.01-2	<0.01	0.2
8.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025 (Part-52, Clause No-6)	0.05-20	<0.05	0.05
9.	Iron as Fe	mg/l	IS 3025 (Part-53, Clause No-6)	0.02-50	0.12	3.0
10.	Copper as Cu	mg/l	APHA, 24th Ed.: 2023,3125-B	0.05-5	<0.05	1.5
11.	Zinc as Zn	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-50	<0.02	15.0
12.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.05	0.005
13.	Sulfide as S ²⁻	mg/l	IS 3025 (Part-29, Clause No-5)	0.05-10	<0.05	-
14.	Mercury as Hg	mg/l	APHA, 24th Ed.: 2023,3125-B	0.001-1	<0.001	-
15.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	-
16.	Lead as Pb	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.01-1	<0.01	0.1
17.	Cadmium as Cd	mg/l	APHA, 24th Ed.: 2023,3125-B	0.002-2	<0.002	0.01
18.	Nickel as Ni	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-10	<0.02	-
19.	Oil & Grease as O&G	mg/l	IS 3025 (Part-39, Clause No-5)	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part-26, Clause No-5)	0.5-10	<0.5	0.2
21.	Cyanide as CN ⁻	mg/l	APHA, 24th Ed:2023:2017, 4500-CN(K)	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/DW/0088/0375/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Drinking Water		
Sample Registration No.	0088	Name of Location	Mount Club Tap Water
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0375/08/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.90	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA 2540 D 24th Ed: 2023	5 -5000	<5	-	-
3.	Fluoride as F	mg/l	APHA 24th Edition 4500-F B&D	0.05 -10	0.12	1	1.5
4.	Nitrate Nitrogen	mg/l	IS:3025 (Part 34)	5-100	<5	45	No Relax
5.	Arsenic as As	mg/l	APHA 3125-B-24th Ed.:2023	0.01-2	<0.01	0.01	0.05
6.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025(Part 52,Clause No.6)	0.05-20	<0.05	-	-
7.	Iron as Fe	mg/l	IS 3025 (Part 53, Clause No. 6)	0.02-50	0.06	0.3	No Relax
8.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	0.05	1.5
9.	Zinc as Zn	mg/l	APHA 3125 B, 23rd Ed:2017	0.02-50	0.08	5.0	15.0
10.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.001	0.001	0.002
11.	Sulfide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	0.05	No Relax
12.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.001	0.001	No Relax
13.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	0.1	0.3
14.	Cadmium as Cd	mg/l	APHA 3125 B-24th Ed.:2023	0.002-2	<0.002	0.003	No Relax
15.	Nickel as Ni	mg/l	APHA 3125 B, 23rd Edition:2017	0.02-10	<0.02	0.02	No Relax
16.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	2 -1000	<2	-	-
17.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 5210(B) 23rd:2017	1 -1000	<1	-	-
18.	Oil & Grease as O&G	mg/l	APHA, 24th Edition 5520 D	2.5-1000	<5	-	-
19.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2	No Relax
20.	Lead as Pb	mg/l	APHA 3125 B, 23rd Ed:2017	0.01-1	<0.01	0.01	No Relax
21.	Cyanide as Cn ⁻	mg/l	APHA, 24th Ed.:2023:2017,4500CN -(K)	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note-

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below Detection Limit

----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/DW/0088/0376/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Drinking Water		
Sample Registration No.	0088	Name of Location	Karo Guest House Tap Water
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0376/08/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.80	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA 2540 D 24th Ed: 2023	5 -5000	<5	-	-
3.	Fluoride as F	mg/l	APHA 24th Edition 4500-F B&D	0.05 -10	0.12	1	1.5
4.	Nitrate Nitrogen	mg/l	IS:3025 (Part 34)	5-100	<5	45	No Relax
5.	Arsenic as As	mg/l	APHA 3125-B-24th Ed.:2023	0.01-2	<0.01	0.01	0.05
6.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025(Part 52,Clause No.6)	0.05-20	<0.05	-	-
7.	Iron as Fe	mg/l	IS 3025 (Part 53, Clause No. 6)	0.02-50	0.12	0.3	No Relax
8.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	0.05	1.5
9.	Zinc as Zn	mg/l	APHA 3125 B, 23rd Ed:2017	0.02-50	<0.02	5.0	15.0
10.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.001	0.001	0.002
11.	Sulfide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	0.05	No Relax
12.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.001	0.001	No Relax
13.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	0.1	0.3
14.	Cadmium as Cd	mg/l	APHA 3125 B-24th Ed.:2023	0.002-2	<0.002	0.003	No Relax
15.	Nickel as Ni	mg/l	APHA 3125 B, 23rd Edition:2017	0.02-10	<0.02	0.02	No Relax
16.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	2 -1000	<2	-	-
17.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 5210(B) 23rd:2017	1 -1000	<1	-	-
18.	Oil & Grease as O&G	mg/l	APHA, 24th Edition 5520 D	2.5-1000	<5	-	-
19.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2	No Relax
20.	Lead as Pb	mg/l	APHA 3125 B, 23rd Ed:2017	0.01-1	<0.01	0.01	No Relax
21.	Cyanide as Cn ⁻	mg/l	APHA, 24th Ed.:2023:2017,4500CN -(K)	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below Detection Limit

----End of Report----

Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/DW/0088/0377/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Ground Water		
Sample Registration No.	0088	Name of Location	Balagoda Village
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0377/08/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.86	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA 2540 D 24th Ed: 2023	5 -5000	<5	-	-
3.	Fluoride as F	mg/l	APHA 24th Edition 4500-F B&D	0.05 -10	0.14	1	1.5
4.	Nitrate Nitrogen	mg/l	IS:3025 (Part 34)	5-100	<5	45	No Relax
5.	Arsenic as As	mg/l	APHA 3125-B-24th Ed.:2023	0.01-2	<0.01	0.01	0.05
6.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025(Part 52,Clause No.6)	0.05-20	<0.05	-	-
7.	Iron as Fe	mg/l	IS 3025 (Part 53, Clause No. 6)	0.02-50	0.10	0.3	No Relax
8.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	0.05	1.5
9.	Zinc as Zn	mg/l	APHA 3125 B, 23rd Ed:2017	0.02-50	0.08	5.0	15.0
10.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.001	0.001	0.002
11.	Sulfide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	0.05	No Relax
12.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.001	0.001	No Relax
13.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	0.1	0.3
14.	Cadmium as Cd	mg/l	APHA 3125 B-24th Ed.:2023	0.002-2	<0.002	0.003	No Relax
15.	Nickel as Ni	mg/l	APHA 3125 B, 23rd Edition:2017	0.02-10	<0.02	0.02	No Relax
16.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	2 -1000	<2	-	-
17.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 5210(B) 24 th Ed.:2023:2017	1 -1000	<1	-	-
18.	Oil & Grease as O&G	mg/l	APHA, 24th Edition 5520 D	2.5-1000	<5	-	-
19.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2	No Relax
20.	Lead as Pb	mg/l	APHA 3125 B, 23rd Ed:2017	0.01-1	<0.01	0.01	No Relax
21.	Cyanide as Cn ⁻	mg/l	APHA, 24th Ed.:2023:2017,4500CN -(K)	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note-

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below Detection Limit

----End of Report----

Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/DW/0088/0378/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Ground Water		
Sample Registration No.	0088	Name of Location	Bolani Gouda Basti
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0378/08/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.86	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA 2540 D 24th Ed: 2023	5 -5000	<5	-	-
3.	Fluoride as F	mg/l	APHA 24th Edition 4500-F B&D	0.05 -10	0.12	1	1.5
4.	Nitrate Nitrogen	mg/l	IS:3025 (Part 34)	5-100	<5	45	No Relax
5.	Arsenic as As	mg/l	APHA 3125-B-24th Ed.:2023	0.01-2	<0.01	0.01	0.05
6.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025(Part 52,Clause No.6)	0.05-20	<0.05	-	-
7.	Iron as Fe	mg/l	IS 3025 (Part 53, Clause No. 6)	0.02-50	0.12	0.3	No Relax
8.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	0.05	1.5
9.	Zinc as Zn	mg/l	APHA 3125 B, 23rd Ed:2017	0.02-50	<0.02	5.0	15.0
10.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.001	0.001	0.002
11.	Sulfide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	0.05	No Relax
12.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.001	0.001	No Relax
13.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	0.1	0.3
14.	Cadmium as Cd	mg/l	APHA 3125 B-24th Ed.:2023	0.002-2	<0.002	0.003	No Relax
15.	Nickel as Ni	mg/l	APHA 3125 B, 23rd Edition:2017	0.02-10	<0.02	0.02	No Relax
16.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	2 -1000	<2	-	-
17.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 5210(B) 24 th Ed.:2023:2017	1 -1000	<1	-	-
18.	Oil & Grease as O&G	mg/l	APHA, 24th Edition 5520 D	2.5-1000	<5	-	-
19.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2	No Relax
20.	Lead as Pb	mg/l	APHA 3125 B, 23rd Ed:2017	0.01-1	<0.01	0.01	No Relax
21.	Cyanide as Cn ⁻	mg/l	APHA, 24th Ed.:2023:2017,4500CN -(K)	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below Detection Limit

----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/DW/0088/0379/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Ground Water		
Sample Registration No.	0088	Name of Location	Bolani Basti Bolani Village
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0379/08/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
22.	pH	-	IS 3025 (Part 11)	2 - 12	6.72	6.5-8.5	No Relax
23.	Total Suspended Solids as TSS	mg/l	APHA 2540 D 24th Ed: 2023	5 -5000	<5	-	-
24.	Fluoride as F	mg/l	APHA 24th Edition 4500-F B&D	0.05 -10	0.08	1	1.5
25.	Nitrate Nitrogen	mg/l	IS:3025 (Part 34)	5-100	<5	45	No Relax
26.	Arsenic as As	mg/l	APHA 3125-B-24th Ed.:2023	0.01-2	<0.01	0.01	0.05
27.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025(Part 52,Clause No.6)	0.05-20	<0.05	-	-
28.	Iron as Fe	mg/l	IS 3025 (Part 53, Clause No. 6)	0.02-50	0.12	0.3	No Relax
29.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	0.05	1.5
30.	Zinc as Zn	mg/l	APHA 3125 B, 23rd Ed:2017	0.02-50	<0.02	5.0	15.0
31.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.001	0.001	0.002
32.	Sulfide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	0.05	No Relax
33.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.001	0.001	No Relax
34.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	0.1	0.3
35.	Cadmium as Cd	mg/l	APHA 3125 B-24th Ed.:2023	0.002-2	<0.002	0.003	No Relax
36.	Nickel as Ni	mg/l	APHA 3125 B, 23rd Edition:2017	0.02-10	<0.02	0.02	No Relax
37.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	2 -1000	<2	-	-
38.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 5210(B) 24 th Ed.:2023:2017	1 -1000	<1	-	-
39.	Oil & Grease as O&G	mg/l	APHA, 24th Edition 5520 D	2.5-1000	<5	-	-
40.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2	No Relax
41.	Lead as Pb	mg/l	APHA 3125 B, 23rd Ed:2017	0.01-1	<0.01	0.01	No Relax
42.	Cyanide as Cn ⁻	mg/l	APHA, 24th Ed.:2023:2017,4500CN -(K)	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note:

5. Test results relate to the items sampled & tested.
6. Test report shall not be reproduced except in full without approval of the laboratory.
7. The test samples will be disposed of after one Month from the date of issue of test report.
8. BDL- Below Detection Limit

----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/WW/0088/0384/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Waste Water		
Sample Registration No.	0088	Name of Location	Oil Catch Pit Water Bottom Garbage
Sampling Method	APHA 24 th Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0385/08/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	GSR 422 (E)
						Desirable Limit
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.62	5.5-9.0
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540 D	5 -5000	40.0	100.0
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part 58)	1 -1000	26.0	250.0
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	IS 3025 (Part 44)	1 -1000	2.9	30.0
5.	Oil & Grease as O&G	mg/l	IS 3025 (Part39, Clause No.5)	2.5-1000	<2.5	10.0
6.	Fluoride as F	mg/l	APHA 4500 F D-24th Ed.: 2023	0.05 -10	0.16	2.0
7.	Nitrate nitrogen	mg/l	APHA 4500 NO2 B-24 th Ed.: 2023	5-100	6.62	-
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.01-2	0.16	-
9.	Arsenic as As	mg/l	APHA 3125-B-23rd Edition: 2017	0.05-20	<0.01	0.2
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IEC 62321: 2021	0.02-50	<0.05	2.0
11.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	3.0
12.	Zinc as Zn	mg/l	APHA 3125 B-24th Ed.:2023	0.02-50	<0.02	5.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 5530 C,D-24th Ed.:2023	0.05 - 10	<0.05	1.0
14.	Sulphide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	2.0
15.	Nickel as Ni	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.02	3.0
16.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.: 2023	0.1-5.0	<0.001	0.01
17.	Manganese as Mn	mg/l	APHA 3125 B-23rd Ed.:2023	0.01-1	<0.1	-
18.	Lead as Pb	mg/l	APHA 3125 B-24th Ed.: 2023	0.002-2	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 3125 B-23rd Ed: 2017	0.02-10	<0.002	2.0
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	4.2	-
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.2

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/WW/0088/0386/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Waste Water		
Sample Registration No.	0088	Name of Location	Oil Catch pit water G-Area
Sampling Method	APHA 24 th Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0386/08/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	GSR 422 (E)
						Desirable Limit
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.68	5.5-9.0
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540 D	5 -5000	36.0	100.0
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part 58)	1 -1000	22.0	250.0
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	IS 3025 (Part 44)	1 -1000	3.0	30.0
5.	Oil & Grease as O&G	mg/l	IS 3025 (Part39, Clause No.5)	2.5-1000	<2.5	10.0
6.	Fluoride as F	mg/l	APHA 4500 F D-24th Ed.: 2023	0.05 -10	0.20	2.0
7.	Nitrate nitrogen	mg/l	APHA 4500 NO2 B-24 th Ed.: 2023	5-100	5.72	-
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.01-2	0.20	-
9.	Arsenic as As	mg/l	APHA 3125-B-23rd Edition: 2017	0.05-20	<0.01	0.2
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IEC 62321: 2021	0.02-50	<0.05	2.0
11.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	3.0
12.	Zinc as Zn	mg/l	APHA 3125 B-24th Ed.:2023	0.02-50	<0.02	5.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 5530 C,D-24th Ed.:2023	0.05 - 10	<0.05	1.0
14.	Sulphide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	2.0
15.	Nickel as Ni	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.02	3.0
16.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.: 2023	0.1-5.0	<0.001	0.01
17.	Manganese as Mn	mg/l	APHA 3125 B-23rd Ed.:2023	0.01-1	<0.1	-
18.	Lead as Pb	mg/l	APHA 3125 B-24th Ed.: 2023	0.002-2	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 3125 B-23rd Ed: 2017	0.02-10	<0.002	2.0
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	4.8	-
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.2

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

2.5 Surface Flow Rate (Nallah/Stream):

Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/SWF/57

Test Report Issue date: 02.09.2025

SURFACE FLOW RATE MONITORING REPORT FOR AUGUST 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : Flow Meter
3. Sampling Location : **Karo River Limtur Villg, Jhikaria Nallah , Panposh Nallah**
4. Sample collected by : EMPL representative in presence of Client's representative.

Location Name	Station Code	Result in (m/sec)
Karo River Limtur Village	SWFM1	0.68
Jhikaria nallah	SWFM2	0.42
Panposh Nallah	SWFM3	0.40

----End of Report----



Authorized By

Technical Manager
(Dr. Midhun G)

2.6 Ground Water Level:

Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/GWL/06

Test Report Issue date: 02.09.2025

GROUND WATER LEVEL MONITORING REPORT FOR AUGUST 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ore Mine ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **Piezometer**
3. Sampling Location : **Balagoda village, Bolani Gauda Basti, Bolani Basti**
4. Sample collected by : **ELPL representative in presence of Client's representative.**

Sl. No.	Name of Location	Unit	Ground Water Level (in Meter)
1.	Balagoda Village	Meter	1.45
2.	Bolani Gauda Basti	Meter	0.75
3.	Bolani Basti	Meter	0.50

----End of Report----

 Authorized By

Technical Manager
(Dr. Midhun G)



SAIL BOLANI ORES
MINES(RSP)

ENVIRONMENTAL
MONITORING

REPORT

SEPTEMBER 2025

Presented By

**Ecomen Mining
Pvt.Ltd**



1.0 PREAMBLE

Steel Authority of India Limited (*hereinafter termed as SAIL*), is a central public sector undertaking under the ownership of Ministry of Steel, Govt. of India has engaged M/s Ecomen Mining Pvt. Ltd., Lucknow, U.P. for carrying out various **Environmental Monitoring and Analysis Work** in its Bolani Ores Mines –RSP located in the district of Keonjhar.

M/s Ecomen Mining Pvt. Ltd. has obtained MoEF & CC Recognition, NABL Accreditation and SPCB, Odisha empanelment for its laboratory division and also a NABET Accredited consultant to carry out EIA/EMP Report for various sectors like Mining, Mineral Beneficiation, Coal Washery, Thermal Power Plant, Metallurgical Industry and Infrastructure & Building Projects etc.

Work Order issued by Bolani Ores Mines-RSP-SAIL vide No-CC/REV/67/2025-26 dated.07.07.2025 for Environmental Monitoring & Analysis Work includes monitoring & analysis of Air Environment, Water Environment, Land Environment such as Ambient Air Quality, Work Zone Air Quality, Water Quality, Waste Water Quality, Vehicular Emission and Soil Quality. This report presents the Environmental monitoring data collected from the core and buffer zone of Bolani Ores Mines in respect of following Environmental attributes during ‘**September-2025**’ in the given frequency. Further, in compliance of condition no 6 (vi) of the EC Grant order vide J/11015/418/2008-IA.II(M) dated. 21.12.2012 and condition no 7 A(iii) of EC Grant order vide J/11015/396/2008-IA.II(M) dated. 21.12.2012 the analysis of air quality monitoring data is done in this report with the objective to see the effectiveness of the mitigative measures already implemented.

Scope of the Work

The scope of work as per the work order for FY-2025-26 is as follows:

Table No. 1.1: Scope of Work

Sl. No.	Particulates	Frequency of monitoring	No. of Stations
1.	Sampling & Analyses for Ambient Air Quality(AAQ) for 5 Parameters i.e. PM 10, PM 2.5, SO ₂ ,NO _x & CO	Daily	04
2.	Sampling & Analyses for Ambient Air Quality (AAQ) for 2 Parameters i.e. PM 10, PM 2.5	Daily	02
3.	Sampling & Analyses of Fugitive dust/Emission (SPM & RSPM)	Daily	10
4.	Sampling & Analyses of Surface/ effluent/ drinking water Quality for 21 parameter	Monthly	08
5.	Sampling and Analyses of ground water quality for 21 parameters	Quarterly	03
6.	Sampling and Analyses of Soil Samples for specified 9 parameters	Yearly	06
7.	Monitoring of weather/meteorological Parameters and continuous generation of data daily round the year by	Daily	01

	establishing online station round the clock throughout the Year		
8.	Smoke Density Monitoring of Vehicular Exhaust	Annually	09
9.	Ground water level Monitoring	Quarterly	03
10.	Nallah/River Flow rate Monitoring	Monthly	03

2.0 DETAILS OF MONITORING/SAMPLING STATIONS:

To carry out the Environmental Data Generation program, ECOMEN in due consultation with SAIL has identified different locations to collect the samples for Air & Water Environment in and around the mining lease area. The details of stations identified are as follows. The details of locations identified for monitoring different environmental parameters are given in the subsequent sections.

2.1 Ambient Air Quality (A)

The prime objective of the ambient air quality study is to establish the existing ambient air quality in and around the mining lease area. The existing ambient air quality was monitored at six (6) locations. Out of six (06) locations, monitoring was carried out for Particulate Matter (PM₁₀), Particulate Matter (PM_{2.5}), Sulphur Dioxide (SO₂), Oxides of Nitrogen (NO_x) as (NO₂) and Carbon Monoxide (CO) at (4) Location and monitoring of Particulate Matter (PM₁₀) and Particulate Matter (PM_{2.5}) was carried out at the rest two (2) Locations as per the guidelines stipulated by Central Pollution Control Board. The locations are as given below.

Table No. 2.1: Details of AAQ Monitoring Stations

Sl. No.	Station Details	ML	Frequency	Station Code	GPS Coordinates	
					Latitude	Longitude
Ambient Air Quality (AAQ) for 5 Parameters i.e. PM ₁₀ , PM _{2.5} , SO ₂ ,NO _x & CO						
1	Bolani Village Community Center	6.90	Daily	A1	22°5'34.13"N	85°19'33.43"E
2	DAV Public School	6.90		A2	22°7'7.37"N	85°20'16.61"E
3	Main Gate	5.10		A3	22°6'18.18"N	85°19'47.27"E
4	Bolani Mines Office complex	5.10		A4	22°6'23.84"N	85°19'45.40"E
Ambient Air Quality (AAQ) for 2 Parameters i.e. PM ₁₀ , PM _{2.5}						
5	Limtur Village	6.90		A5	22°7'35.14"N	85°21'10.46"E
6	Karo Guest House	6.90		A6	22°05'36.38"N	85°20'32.38"E

2.2 Work Zone Air Quality/Fugitive Dust Emission Monitoring (F)

To assess the level of fugitive dust due to mining and allied activities, ten (10) monitoring stations were selected within the lease considering the activity area. Fugitive emissions monitoring was carried out on Daily Basis. The locations are as given below.

Table No. 2.2: Details of Fugitive Emission Monitoring Stations

Sl. No.	Station Details	ML	Frequency	Station Code	GPS Coordinates	
					Latitude	Longitude
1	Panposh	5.10	Daily	F1	22°6'41.46"N	85°19'41.60"E
2	D Area	5.10		F2	22°07'19.78"N	85°20'5.70"E
3	F Area	5.10		F3	22°05'45.19"N	85°18'21.95"E
4	G Area	5.10		F4	22°06'3.88"N	85°18'8.22"E
5	Lump Loading Point (near 600TPH)	6.90		F5	22°06'18.79"N	85°19'54.78"E
6	Fines Loading Plant	6.90		F6	22°05'51.12"N	85°19'45.79"E
7	Dump Fines handling route	6.90		F7	22°5'39.31"N	85°19'26.29"E
8	SSP	5.10		F8	22°06'13.80"N	85°19'12.52"E
9	Dump Fines Handling Site	5.10		F9	22°06'09.94"N	85°19'30.61"E
10	Mn Quarry	6.90		F10	22°07'23.56"N	85°21'8.86"E

2.3 Surface/Effluent/Drinking Water Quality:

In order to assess the quality of surface/effluent/drinking water, Eight (8) locations were identified in and around the ML area. Out of eight (8) locations, surface water was taken from four (4) locations, drinking water was taken from two (2) locations and effluent water was taken from two (2) locations. One grab sample was collected from each location in the month and was analyzed for 21 parameters as stipulated in the scope of work. The details of the locations are as follows:

Table No. 2.3: Details of Surface/Effluent/Drinking Water Quality Monitoring Stations

Station Details	Frequency	Station Code	GPS Coordinates	
			Latitude	Longitude
Surface Water Quality				
Panposh Nallah	Monthly Once	SWQ-1	22°6'31.68"N	85°19'34.41"E
Karo Near Lease Boundary		SWQ-2	22°7'26.27" N	85°21'52.95"E
Karo River Intake		SWQ-3	22°5.13.02' N	85°19'57.88"E

Jhikaria nallah before joining Karo		SWQ-4	22°5'22.50" N	85°19'10.05"E
Drinking Water Quality				
Mount Club Tap Water	Monthly Once	DW-1	22°6'56.24" N	85°19'58.21"E
Karo Guest House Tap Water		DW-2	22°5'36.68" N	85°20'32.09"E
Effluent Waste Water				
Oil Catch Pit Water Bottom Garage	Monthly Once	EW-1	22°6'27.11" N	85°19'37.62"E
Oil Catch pit water G-Area		EW-2	22°6'1.83"N	85°18'24.16"E

2.4 Ground Water Quality (GWQ)

In order to assess the quality of ground water, three (3) locations were identified in and around the mining lease area. One grab sample is collected from each location quarterly and analyzed for 21 parameters as stipulated in the scope of work. The details of the locations are as follows:

Table No. 2.4: Details of Ground Water Quality Monitoring Stations

Station Details	Frequency	Station Code	GPS Coordinates	
			Latitude	Longitude
Ground Water Quality				
Bolani Village-Well water	Quarterly	GWQ-1	22° 05′ 27.20″N	85° 19′ 27.13″E
Bolani Gouda Basti-Well water		GWQ-2	22° 05′ 40.97″N	85° 20′ 2.45″E
Balagoda Village-Well water		GWQ-3	22° 05′ 57.02″N	85° 20′ 27.41″E

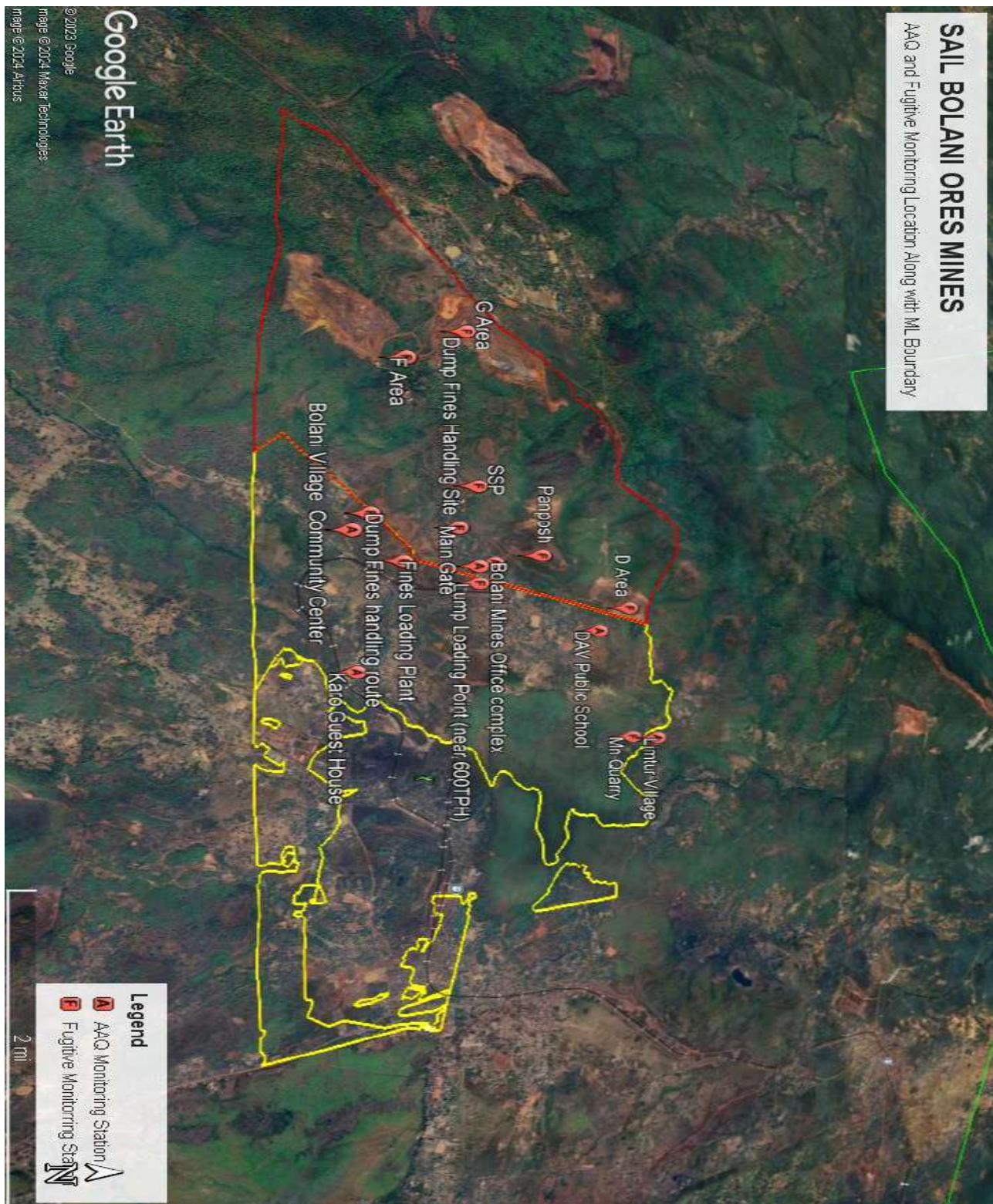
2.5 Weather/Meteorology

An Automatic Weather Monitoring Station (AWS) is installed at DAV Public School (22°7'7.85"N; 85°20'16.83"E) to collect the meteorological data on daily basis continuously. The parameters monitored at the meteorological station were Temperature, Relative Humidity, Wind Speed, Wind Direction and Rainfall. These parameters were recorded at weather monitoring station using the respective sensors.

Table No. 2.5: Details of Meteorological Monitoring Stations

Station Details	Frequency	Station Code	GPS Coordinates	
			Latitude	Longitude
DAV Public School	Daily Basis	M	22°7'7.85"N	85°20'16.83"E

Figure No.1: Location of Monitoring Station with ML Boundary



3.0 RESULTS AND DISCUSSION

3.1 Ambient Air Quality Monitoring

The Summarized results of AAQ for the month of September-2025 are given in the Table below

Table No. 3.1 (a): Summarized Results of Ambient Air Quality

Sl. No.	Location Name	Station Code	PM ₁₀			PM _{2.5}		
			Max.	Min.	Avg.	Max.	Min	Avg.
1.	Bolani Village Community center	A1	48	40.4	43.8	22.7	15.2	19.5
2.	Dav Public School	A2	48	40.1	44.2	22.6	15.2	19.4
3.	Main Gate	A3	47.9	40.3	43.6	22.9	16.4	20.4
4.	Bolani Mines Office Complex	A4	47.5	40.2	43.3	22.7	16.3	19.7
5.	Limtur Village	A5	47.6	40.0	43.5	23.0	16.4	19.8
6.	Karo Guest House	A6	47.9	40.8	43.8	22.8	15.1	19.5
CPCB Std.			100 µg/m ³			60 µg/m ³		

Table No. 3.1(b): Summarized Results of Ambient Air Quality

Sl. No.	Location Name	Station Code	SO ₂			NO _x		
			Max.	Min.	Avg.	Max.	Min	Avg.
1.	Bolani Village Community Center	A1	19	16	17.2	19	15.1	17.0
2.	Dav Public School	A2	18.9	16	17.5	19	15.2	16.8
3.	Main Gate	A3	18.9	16.1	17.2	18.8	15.1	16.9
4.	Bolani Mines Office Complex	A4	18.9	16.1	17.4	18.7	15.1	16.7
CPCB Std.			80 µg/m ³			80 µg/m ³		

BDL of SO₂ ≤ 4 µg/m³, BDL of NO_x ≤ 9 µg/m³ (NO_x as NO₂)

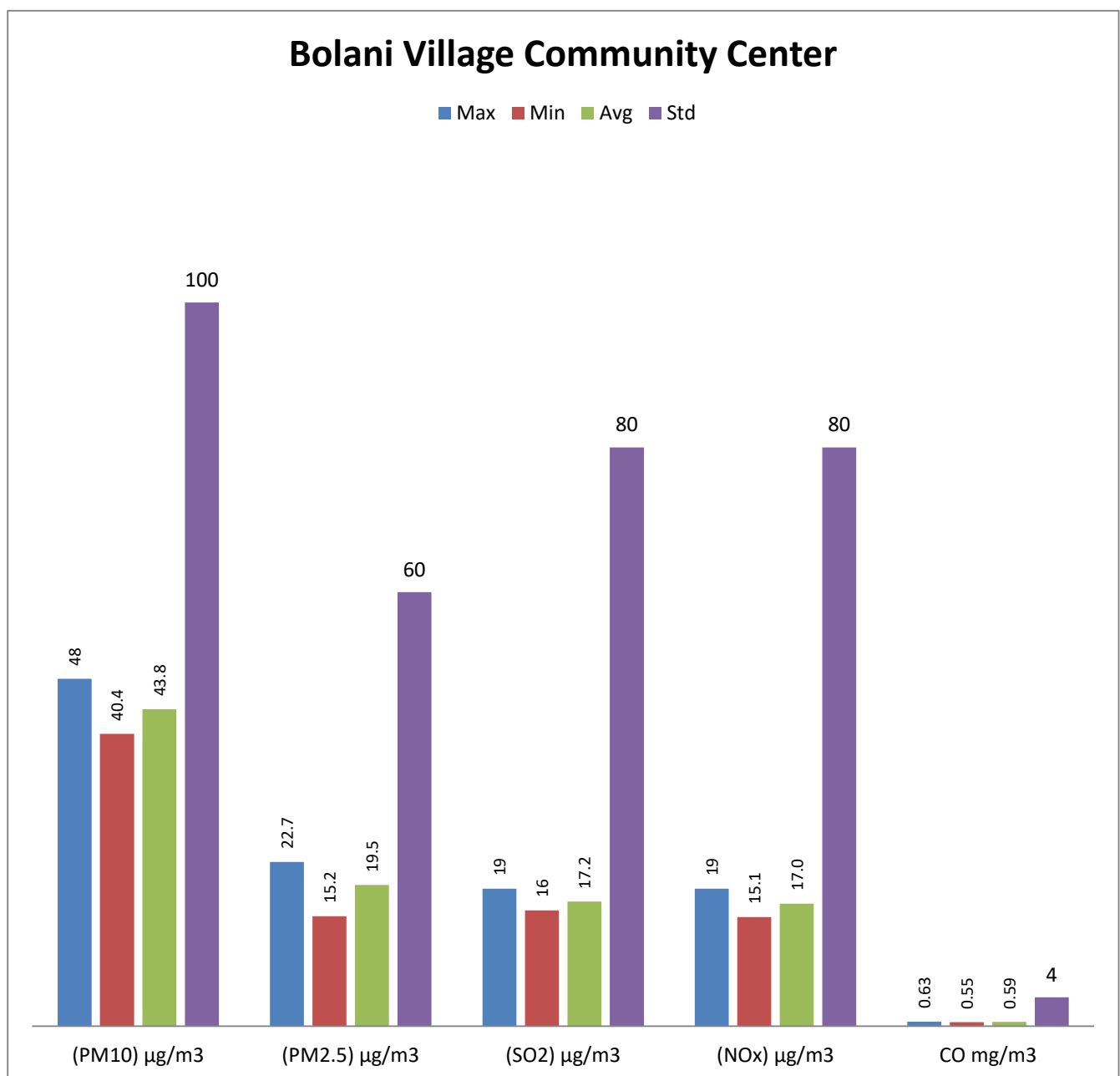
Table No. 3.1(c): Summarized Results of Ambient Air Quality

Sl. No.	Location Name	Station Code	CO		
			Max.	Min.	Avg.
1.	Bolani Village Community Center	A1	0.63	0.55	0.59
2.	Dav Public School	A2	0.64	0.55	0.59
3.	Main Gate	A3	0.64	0.56	0.60
4.	Bolani Mines Office Complex	A4	0.64	0.55	0.60
CPCB Std.			4 mg/m ³		

Note: BDL value for CO-0.11 mg/m³

3.1.1 Bolani village Community Center (A1):

The pollution level in Bolani village Community Center for the parameters PM₁₀, PM_{2.5}, SO₂, NO_x & CO is within the stipulated norms of CPCB. The maximum concentration of PM₁₀ was observed **48.0** µg/m³ whereas minimum concentration was observed **40.4** µg/m³ during the month. PM_{2.5} concentration ranges between **15.2** µg/m³ to **22.7** µg/m³, SO₂ concentration ranges between **16.0** µg/m³ to **19.0** µg/m³, NO_x as (NO₂) concentration ranges between **15.1** µg/m³ to **19.0** µg/m³ and CO concentration ranges between **0.55** mg/m³ to **0.63** mg/m³ was observed during the month



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/AAQ/160

Test Report Issue date: 02.10.2025

AMBIENT AIR QUALITY MONITORING REPORT FOR SEPTEMBER 2025

1. Name of Industry : Steel Authority of India limited,
Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha
2. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer (NDIR)
3. Sampling Location : AAQMS-1: Bolani village Community Center
4. Sample collected by : EMPL representative in presence of Client's representative.

Parameters		Particulate Matter (PM ₁₀) µg/m ³	Particulate Matter (PM _{2.5}) µg/m ³	Sulphur Di-oxide (SO ₂) µg/m ³	Nitrogen Oxides (NO _x) µg/m ³	Carbon mono-oxides as CO mg/m ³
PROTOCOL		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
Limits of Detection		10-1000	10-1000	5-200	5-200	0.1-100
Limit as per National Ambient Air Quality Standards		100	60	80	80	4
S. No.	Sampling Date	Results				
1.	01.09.2025	41.7	20.2	16.7	16.0	0.62
2.	02.09.2025	43.0	22.3	16.0	15.8	0.59
3.	03.09.2025	44.5	22.6	17.3	15.5	0.62
4.	04.09.2025	44.5	20.9	16.5	18.3	0.56
5.	05.09.2025	46.6	20.9	16.9	16.7	0.61
6.	06.09.2025	40.6	18.2	17.3	17.3	0.55
7.	07.09.2025	42.7	21.4	17.8	15.2	0.56
8.	08.09.2025	45.2	22.7	18.2	17.3	0.58
9.	09.09.2025	47.3	22.4	17.8	17.4	0.59
10.	10.09.2025	45.5	21.4	16.8	17.8	0.62
11.	11.09.2025	41.0	20.9	18.7	18.9	0.57
12.	12.09.2025	42.3	18.2	16.2	17.1	0.63
13.	13.09.2025	43.2	21.4	18.0	18.3	0.60
14.	14.09.2025	40.4	21.4	18.3	18.1	0.57
15.	15.09.2025	47.6	18.3	17.5	15.1	0.59
16.	16.09.2025	45.5	19.3	16.5	16.7	0.59
17.	17.09.2025	41.1	17.6	16.2	16.0	0.56
18.	18.09.2025	41.5	15.2	16.4	15.6	0.59
19.	19.09.2025	43.1	20.4	17.4	17.5	0.63
20.	20.09.2025	48.0	17.7	16.9	18.4	0.63
21.	21.09.2025	41.6	18.8	18.0	16.6	0.60
22.	22.09.2025	42.9	20.1	16.2	17.7	0.59
23.	23.09.2025	42.6	17.9	16.4	19.0	0.63
24.	24.09.2025	48.0	21.5	19.0	15.4	0.55
25.	25.09.2025	45.7	18.8	17.2	18.1	0.55
26.	26.09.2025	42.4	15.2	16.3	17.0	0.57
27.	27.09.2025	46.5	17.2	18.7	15.5	0.62
28.	28.09.2025	40.6	17.5	18.7	16.8	0.59
29.	29.09.2025	46.1	16.7	16.0	15.9	0.62
30.	30.09.2025	42.5	18.2	17.2	17.6	0.55
Average		43.8	19.5	17.2	17.0	0.59

Note- No_x is Given as No₂

----End of Report----

Verified By

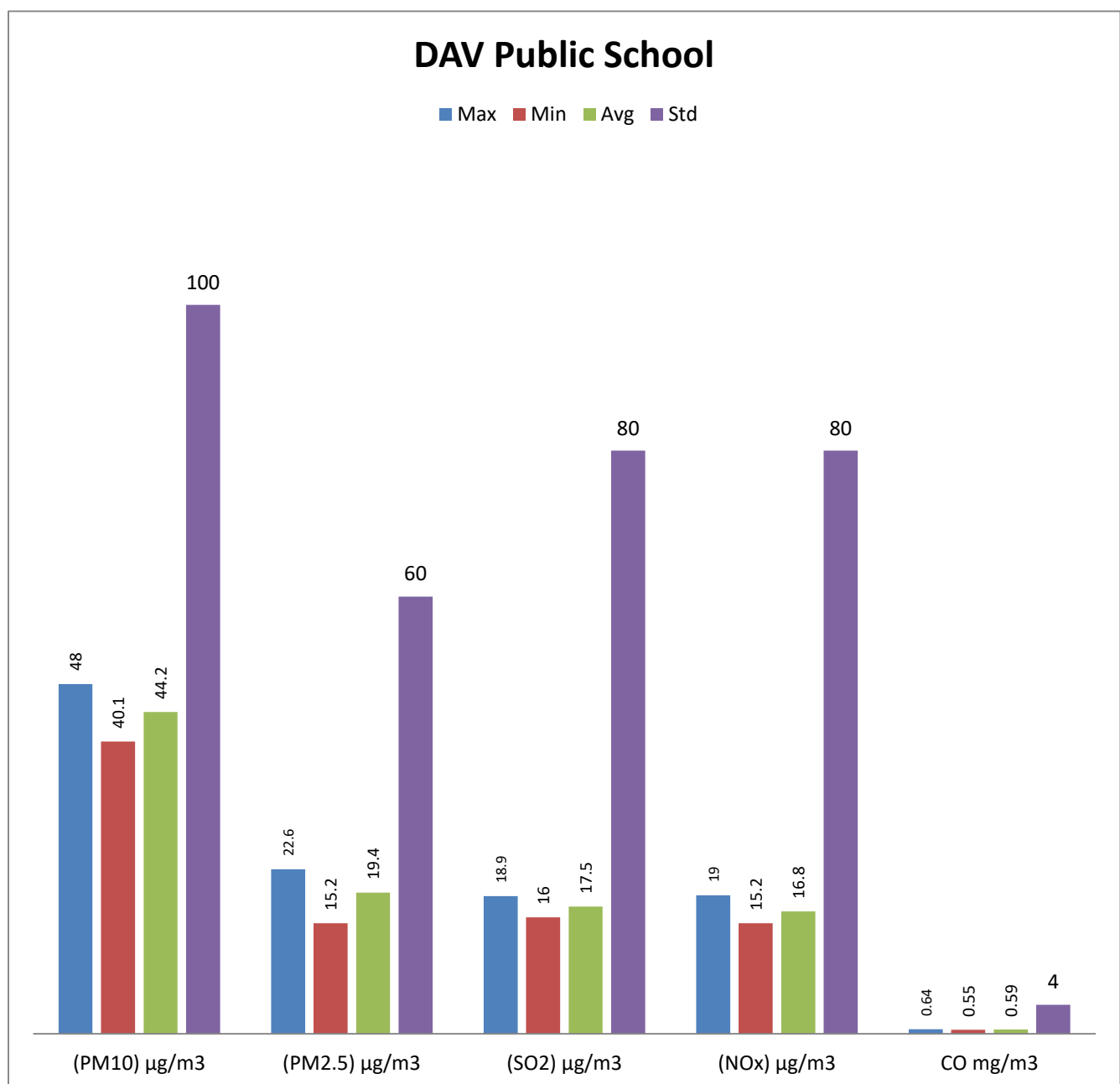
Technical Manager
(Vikas Kumar)

Authorized By

Quality Manager
(Dr. Abhishek Kumar Singh)

3.1.2 DAV Public School (A2):

The pollution level in DAV Public School for the parameters PM₁₀, PM_{2.5}, SO₂, NO_x & CO is within the stipulated norms of CPCB. The maximum concentration of PM₁₀ was observed **48.0** µg/m³ whereas minimum concentration was observed **40.1** µg/m³ during the month. PM_{2.5} concentration ranges between **15.2** µg/m³ to **22.6** µg/m³, SO₂ concentration ranges between **16.0** µg/m³ to **18.9** µg/m³, NO_x as (NO₂) concentration ranges between **15.2** µg/m³ to **19.0** µg/m³ and CO concentration ranges between **0.55** mg/m³ to **0.64** mg/m³ was observed during the month



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/AAQ/161

Test Report Issue date: 02.10.2025

AMBIENT AIR QUALITY MONITORING REPORT FOR SEPTEMBER 2025

1. Name of Industry : Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha
2. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer (NDIR)
3. Sampling Location : AAQMS-2: DAV Public School
4. Sample collected by : EMPL representative in presence of Client's representative.

Parameters		Particulate Matter (PM ₁₀) µg/m ³	Particulate Matter (PM _{2.5}) µg/m ³	Sulphur Di-oxide (SO ₂) µg/m ³	Nitrogen Oxides (NO _x) µg/m ³	Carbon mono-oxides as CO mg/m ³
PROTOCOL		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
Limits of Detection		10-1000	10-1000	5-200	5-200	0.1-100
Limit as per National Ambient Air Quality Standards		100	60	80	80	4
S. No.	Sampling Date	Results				
1.	01.09.2025	46.3	18.3	17.0	15.3	0.62
2.	02.09.2025	40.9	19.4	17.3	15.7	0.61
3.	03.09.2025	47.9	18.2	16.2	16.8	0.56
4.	04.09.2025	45.3	20.3	18.0	18.0	0.57
5.	05.09.2025	44.5	19.0	17.3	15.4	0.55
6.	06.09.2025	42.9	18.6	17.9	17.9	0.59
7.	07.09.2025	47.8	20.9	17.2	18.8	0.58
8.	08.09.2025	43.1	19.5	17.5	17.9	0.60
9.	09.09.2025	45.7	20.8	17.0	17.7	0.56
10.	10.09.2025	42.9	21.4	18.8	15.3	0.57
11.	11.09.2025	48.0	22.0	17.6	17.4	0.56
12.	12.09.2025	44.5	18.3	18.4	15.2	0.62
13.	13.09.2025	47.7	21.1	16.5	15.8	0.61
14.	14.09.2025	43.1	22.6	16.0	15.9	0.60
15.	15.09.2025	46.9	19.3	16.4	18.4	0.58
16.	16.09.2025	40.3	15.6	16.7	16.1	0.57
17.	17.09.2025	45.3	18.9	18.5	18.4	0.59
18.	18.09.2025	40.5	21.7	18.7	15.3	0.58
19.	19.09.2025	45.5	21.5	18.9	16.6	0.60
20.	20.09.2025	43.8	21.3	18.8	16.2	0.55
21.	21.09.2025	40.5	19.2	16.2	15.2	0.56
22.	22.09.2025	40.1	15.7	17.1	15.9	0.61
23.	23.09.2025	41.3	20.7	18.8	16.9	0.63
24.	24.09.2025	40.9	18.5	16.2	16.9	0.56
25.	25.09.2025	43.6	17.3	18.1	19.0	0.64
26.	26.09.2025	45.4	18.7	18.4	18.6	0.57
27.	27.09.2025	44.0	17.8	16.2	18.5	0.63
28.	28.09.2025	46.5	19.5	17.5	17.4	0.57
29.	29.09.2025	43.4	20.1	17.2	15.4	0.56
30.	30.09.2025	46.4	15.2	18.0	16.3	0.63
Average		44.2	19.4	17.5	16.8	0.59

Note- No_x is Given as No₂

----End of Report----

Verified By

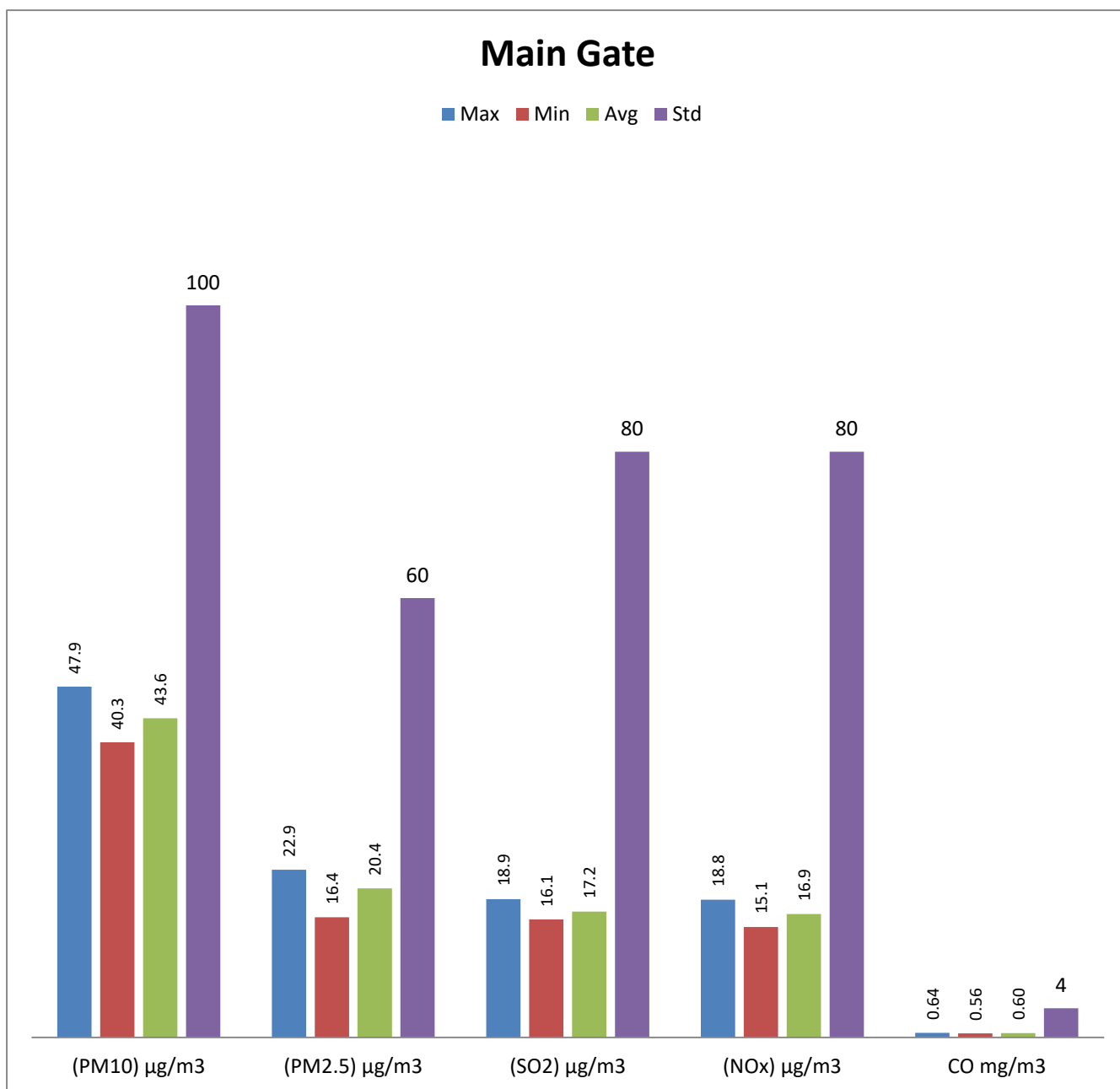

 Technical Manager
 (Vikas Kumar)

Authorized By


 Quality Manager
 (Dr. Abhishak Kumar Singh)


3.1.3 Main Gate (A3):

The pollution level in Main Gate for the parameters PM₁₀, PM_{2.5}, SO₂, NO_x & CO is within the stipulated norms of CPCB. The maximum concentration of PM₁₀ was observed 47.9 µg/m³ whereas minimum concentration was observed 40.3 µg/m³ during the month. PM_{2.5} concentration ranges between 15.4 µg/m³ to 22.9 µg/m³, SO₂ concentration ranges between 16.4 µg/m³ to 22.9 µg/m³, NO_x as (NO₂) concentration ranges between 15.1 µg/m³ to 18.8 µg/m³ and CO concentration ranges between 0.56 mg/m³ to 0.64 mg/m³ was observed during the month



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/AAQ/162

Test Report Issue date: 02.10.2025

AMBIENT AIR QUALITY MONITORING REPORT FOR SEPTEMBER 2025

1. Name of Industry : Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha
2. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer (NDIR)
3. Sampling Location : AAQMS-3: Main Gate
4. Sample collected by : EMPL representative in presence of Client's representative.

Parameters		Particulate Matter (PM ₁₀) µg/m³	Particulate Matter (PM _{2.5}) µg/m³	Sulphur Di-oxide (SO ₂) µg/m³	Nitrogen Oxides (NO _x) µg/m³	Carbon mono-oxides as CO mg/m³
PROTOCOL		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
Limits of Detection		10-1000	10-1000	5-200	5-200	0.1-100
Limit as per National Ambient Air Quality Standards		100	60	80	80	4
S. No.	Sampling Date	Results				
1.	01.09.2025	40.3	18.2	17.4	15.2	0.56
2.	02.09.2025	43.2	20.7	16.3	17.9	0.59
3.	03.09.2025	45.5	21.4	17.1	16.1	0.57
4.	04.09.2025	43.2	20.4	16.5	18.6	0.62
5.	05.09.2025	44.5	20.8	16.6	16.6	0.61
6.	06.09.2025	45.7	20.4	17.4	17.1	0.62
7.	07.09.2025	44.8	22.9	17.8	18.0	0.63
8.	08.09.2025	45.4	21.0	16.8	17.0	0.60
9.	09.09.2025	45.6	22.6	17.4	15.4	0.60
10.	10.09.2025	44.9	22.4	17.5	18.3	0.58
11.	11.09.2025	41.6	19.7	18.7	16.0	0.56
12.	12.09.2025	40.5	20.7	18.9	17.7	0.61
13.	13.09.2025	43.2	18.5	18.9	15.1	0.62
14.	14.09.2025	45.5	21.0	16.8	15.7	0.56
15.	15.09.2025	40.3	22.7	17.9	18.8	0.59
16.	16.09.2025	45.9	21.2	16.8	18.5	0.63
17.	17.09.2025	44.7	17.4	17.6	16.2	0.57
18.	18.09.2025	44.0	16.4	16.3	17.8	0.63
19.	19.09.2025	40.8	20.7	16.4	16.2	0.61
20.	20.09.2025	42.0	20.5	16.1	15.4	0.61
21.	21.09.2025	42.9	20.7	16.7	17.0	0.62
22.	22.09.2025	41.5	21.5	16.5	15.8	0.60
23.	23.09.2025	47.9	20.1	17.7	18.2	0.57
24.	24.09.2025	41.6	19.1	16.6	15.3	0.62
25.	25.09.2025	41.6	20.7	16.4	15.6	0.59
26.	26.09.2025	44.3	17.8	16.5	15.6	0.64
27.	27.09.2025	41.2	21.3	18.7	17.8	0.63
28.	28.09.2025	44.9	19.8	17.2	18.5	0.56
29.	29.09.2025	45.5	20.1	16.5	16.3	0.61
30.	30.09.2025	45.1	20.6	17.6	18.5	0.63
Average		43.6	20.4	17.2	16.9	0.60

Note- No_x is Given as NO₂

---End of Report---

Verified By

 Technical Manager
 (Vikas Kumar)

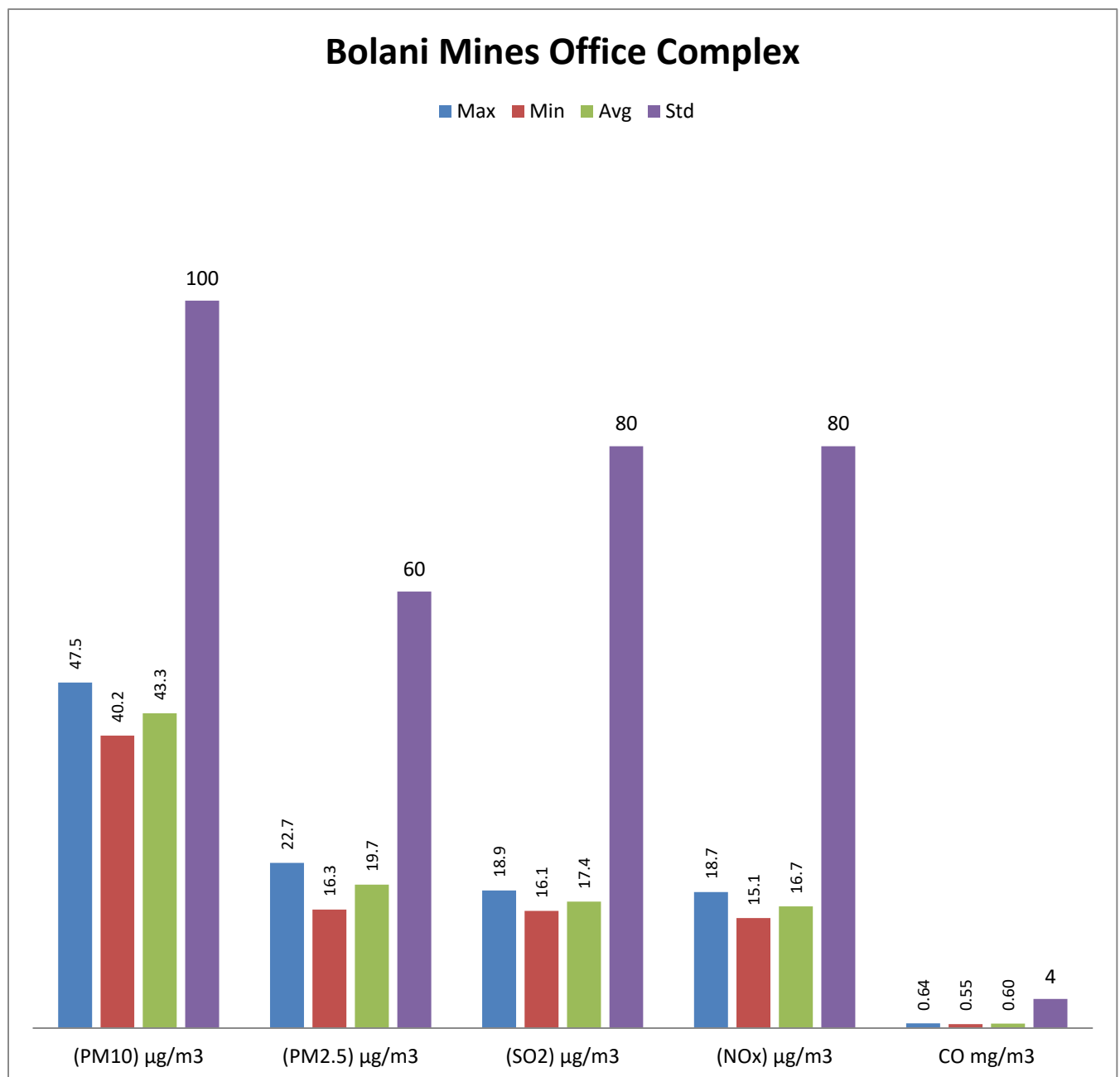
Authorized By

 Quality Manager
 (Dr. Abhishek Kumar Singh)



3.1.4 Bolani Mines Office Complex (A4):

The pollution level in Bolani Mines Office Complex for the parameters PM₁₀, PM_{2.5}, SO₂, NO_x & CO is within the stipulated norms of CPCB. The maximum concentration of PM₁₀ was observed **47.5** µg/m³ whereas minimum concentration was observed **40.2** µg/m³ during the month. PM_{2.5} concentration ranges between **16.3** µg/m³ to **22.7** µg/m³, SO₂ concentration ranges between **16.1** µg/m³ to **18.9** µg/m³, NO_x as (NO₂) concentration ranges between **15.1** µg/m³ to **18.7** µg/m³ and CO concentration ranges between **0.55** mg/m³ to **0.64** mg/m³ was observed during the month



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/AAQ/163

Test Report Issue date: 02.10.2025


AMBIENT AIR QUALITY MONITORING REPORT FOR SEPTEMBER 2025

1. Name of Industry : Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha
2. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer (NDIR)
3. Sampling Location : AAQMS-4: Bolani Mines Office Complex
4. Sample collected by : EMPL representative in presence of Client's representative.

Parameters		Particulate Matter (PM ₁₀) µg/m ³	Particulate Matter (PM _{2.5}) µg/m ³	Sulphur Di-oxide (SO ₂) µg/m ³	Nitrogen Oxides (NO _x) µg/m ³	Carbon mono-oxides as CO mg/m ³
PROTOCOL		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
Limits of Detection		10-1000	10-1000	5-200	5-200	0.1-100
Limit as per National Ambient Air Quality Standards		100	60	80	80	4
S. No.	Sampling Date	Results				
1.	01.09.2025	44.5	18.9	16.2	18.1	0.62
2.	02.09.2025	47.5	21.4	18.2	16.3	0.62
3.	03.09.2025	40.2	20.1	16.3	17.4	0.57
4.	04.09.2025	40.4	19.9	18.5	16.6	0.61
5.	05.09.2025	46.9	22.4	16.7	17.7	0.57
6.	06.09.2025	44.7	20.6	18.0	15.6	0.61
7.	07.09.2025	44.0	21.3	16.3	15.9	0.62
8.	08.09.2025	46.8	22.4	18.2	15.6	0.60
9.	09.09.2025	41.0	22.7	17.0	16.5	0.60
10.	10.09.2025	42.4	18.3	17.5	16.2	0.61
11.	11.09.2025	45.3	18.7	16.8	18.0	0.61
12.	12.09.2025	40.3	21.1	16.9	15.1	0.55
13.	13.09.2025	43.2	19.1	16.1	15.9	0.59
14.	14.09.2025	41.5	18.3	17.6	16.4	0.57
15.	15.09.2025	42.4	21.2	17.7	16.3	0.62
16.	16.09.2025	41.5	19.5	16.2	16.8	0.59
17.	17.09.2025	41.0	18.5	17.0	17.1	0.60
18.	18.09.2025	43.1	19.4	17.5	18.0	0.63
19.	19.09.2025	45.4	18.7	17.5	15.5	0.56
20.	20.09.2025	44.1	20.8	18.7	16.1	0.59
21.	21.09.2025	40.9	20.5	18.4	18.6	0.59
22.	22.09.2025	42.6	21.4	18.5	16.4	0.62
23.	23.09.2025	40.9	20.5	17.6	15.2	0.60
24.	24.09.2025	43.9	16.9	18.3	16.5	0.59
25.	25.09.2025	42.2	16.8	18.2	18.3	0.59
26.	26.09.2025	43.7	18.3	16.1	18.7	0.60
27.	27.09.2025	44.4	18.0	17.1	17.2	0.63
28.	28.09.2025	45.1	21.5	16.2	16.5	0.64
29.	29.09.2025	41.3	16.3	18.9	17.6	0.63
30.	30.09.2025	46.8	17.9	16.8	15.2	0.58
Average		43.3	19.7	17.4	16.7	0.60

Note- No_x is Given as No₂

---End of Report---

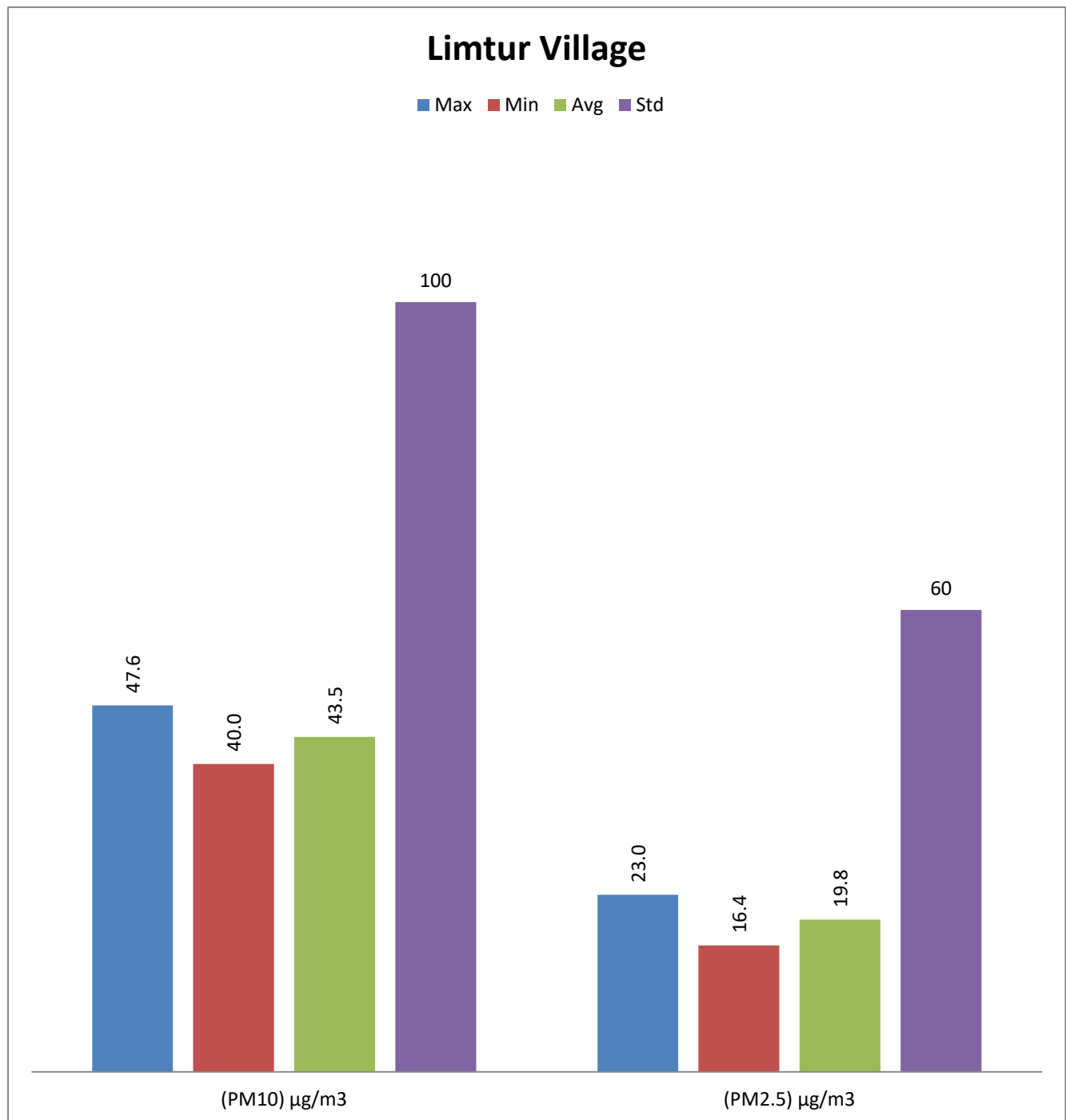
Verified By

 Technical Manager
 (Vikas Kumar)

Authorized By

 Quality Manager
 (Dr. Abhishek Kumar Singh)


3.1.5 Limtur Village (A5):

The pollution level in Limtur Village for the parameters PM_{10} and $PM_{2.5}$ is within the stipulated norms of CPCB. The maximum concentration of PM_{10} was observed $47.6 \mu\text{g}/\text{m}^3$ whereas minimum concentration was observed $40.0 \mu\text{g}/\text{m}^3$ and $PM_{2.5}$ concentration ranges between $16.4 \mu\text{g}/\text{m}^3$ to $23.0 \mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/AAQ/164

Test Report Issue date: 02.10.2025

AMBIENT AIR QUALITY MONITORING REPORT FOR SEPTEMBER 2025

1. Name of Industry : Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha
2. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer (NDIR)
3. Sampling Location : AAQMS-5: Limtur Village
4. Sample collected by : EMPL representative in presence of Client's representative.

Parameters		Particulate Matter (PM ₁₀) µg/m ³	Particulate Matter (PM _{2.5}) µg/m ³
PROTOCOL		IS:5182(Part-23)	IS:5182(Part-24)
Limits of Detection		10-1000	10-1000
Limit as per National Ambient Air Quality Standards		100	60
S. No.	Sampling Date	Result	
1.	01.09.2025	42.8	18.4
2.	02.09.2025	41.1	23.0
3.	03.09.2025	43.0	19.8
4.	04.09.2025	40.0	20.6
5.	05.09.2025	44.9	19.7
6.	06.09.2025	47.3	19.1
7.	07.09.2025	42.1	19.2
8.	08.09.2025	45.5	18.3
9.	09.09.2025	42.5	21.3
10.	10.09.2025	45.1	21.8
11.	11.09.2025	47.6	20.3
12.	12.09.2025	41.7	22.7
13.	13.09.2025	46.5	22.2
14.	14.09.2025	41.4	21.2
15.	15.09.2025	40.1	20.8
16.	16.09.2025	45.0	16.4
17.	17.09.2025	42.6	18.9
18.	18.09.2025	46.5	19.2
19.	19.09.2025	43.7	17.5
20.	20.09.2025	43.3	19.4
21.	21.09.2025	42.1	21.5
22.	22.09.2025	45.9	21.2
23.	23.09.2025	42.3	20.0
24.	24.09.2025	40.2	16.9
25.	25.09.2025	44.7	21.6
26.	26.09.2025	40.2	16.8
27.	27.09.2025	42.1	17.5
28.	28.09.2025	47.0	17.3
29.	29.09.2025	42.2	19.7
30.	30.09.2025	45.9	20.7
Average		43.5	19.8

----End of Report----

Verified By

 Technical Manager
 (Vikas Kumar)

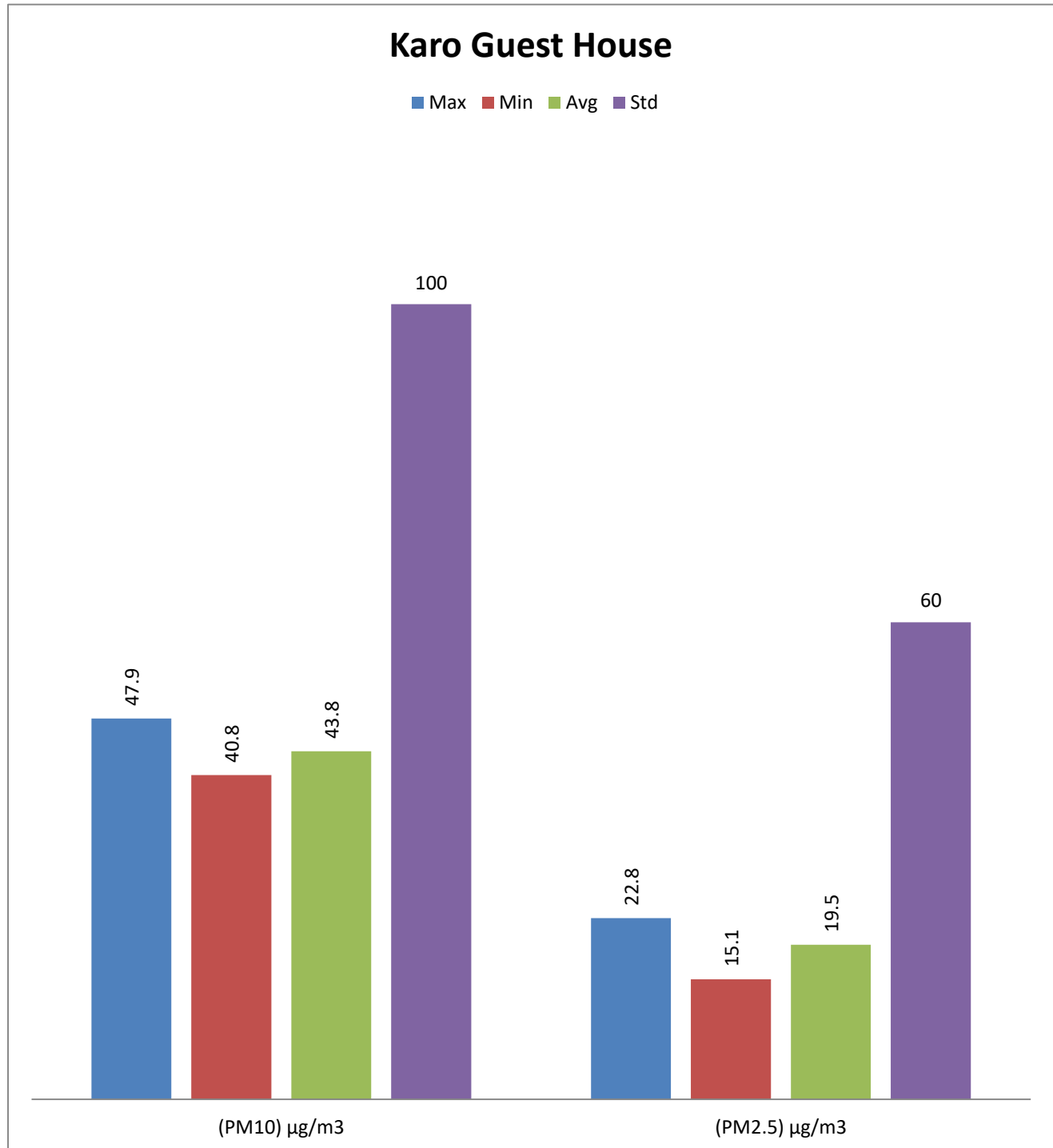
Authorized By

 Quality Manager
 (Dr. Abhishek Kumar Singh)



3.1.6 Karo Guest House (A6):

The pollution level in Karo Guest House for the parameters PM_{10} and $PM_{2.5}$ is within the stipulated norms of CPCB. The maximum concentration of PM_{10} was observed $47.9 \mu\text{g}/\text{m}^3$ whereas minimum concentration was observed $40.8 \mu\text{g}/\text{m}^3$ and $PM_{2.5}$ concentration ranges between $15.1 \mu\text{g}/\text{m}^3$ to $22.8 \mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/AAQ/165

Test Report Issue date: 02.10.2025

AMBIENT AIR QUALITY MONITORING REPORT FOR SEPTEMBER 2025

1. Name of Industry : Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha
2. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer (NDIR)
3. Sampling Location : AAQMS-6: Karo Guest House
4. Sample collected by : EMPL representative in presence of Client's representative.

Parameters		Particulate Matter (PM ₁₀) µg/m ³	Particulate Matter (PM _{2.5}) µg/m ³
PROTOCOL		IS:5182(Part-23)	IS:5182(Part-24)
Limits of Detection		10-1000	10-1000
Limit as per National Ambient Air Quality Standards		100	60
S. No.	Sampling Date	Result	
1.	01.09.2025	44.6	20.9
2.	02.09.2025	41.8	18.3
3.	03.09.2025	41.8	20.9
4.	04.09.2025	45.5	22.8
5.	05.09.2025	41.1	19.4
6.	06.09.2025	45.3	18.4
7.	07.09.2025	42.9	20.3
8.	08.09.2025	42.4	19.8
9.	09.09.2025	43.2	21.4
10.	10.09.2025	43.7	19.6
11.	11.09.2025	44.3	21.2
12.	12.09.2025	47.6	19.2
13.	13.09.2025	41.9	19.5
14.	14.09.2025	47.2	19.1
15.	15.09.2025	45.0	19.0
16.	16.09.2025	47.9	19.2
17.	17.09.2025	44.2	20.9
18.	18.09.2025	43.1	15.1
19.	19.09.2025	42.2	19.6
20.	20.09.2025	45.1	19.3
21.	21.09.2025	41.1	21.7
22.	22.09.2025	47.8	20.9
23.	23.09.2025	40.8	18.4
24.	24.09.2025	42.9	18.8
25.	25.09.2025	42.7	18.3
26.	26.09.2025	45.1	18.4
27.	27.09.2025	44.4	19.7
28.	28.09.2025	44.0	16.9
29.	29.09.2025	41.3	16.2
30.	30.09.2025	42.5	20.6
Average		43.8	19.5

----End of Report----

Verified By


 Technical Manager
 (Vikas Kumar)

Authorized By


 Quality Manager
 (Dr. Abhishek Kumar Singh)


3.2 Work Zone Air Quality/Fugitive Dust Emission Monitoring:

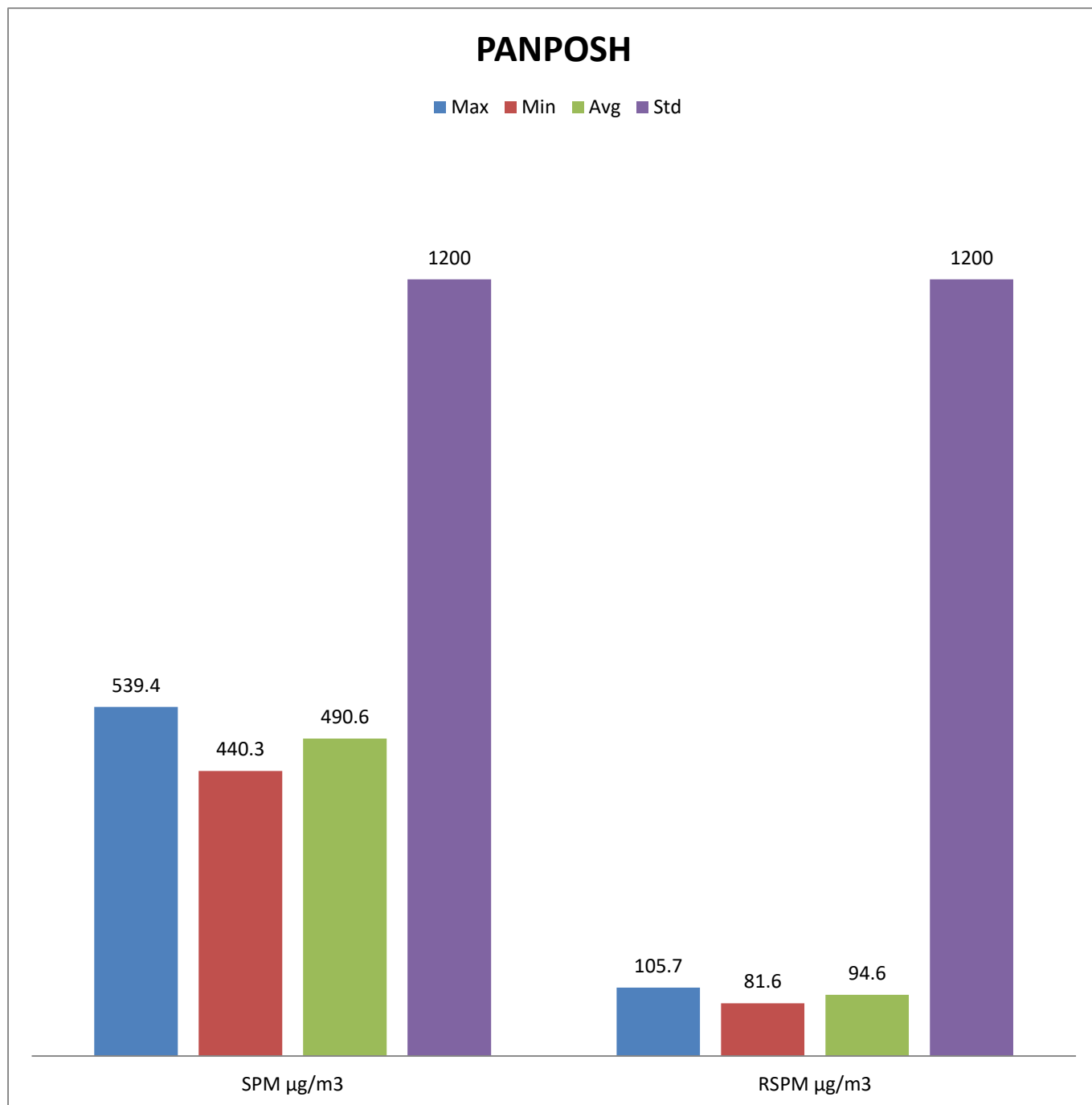
The Summarized results of Work Zone Air Quality/Fugitive Dust Emission for the month of September-2025 are given in the Table below

Table No. 3.2: Summarized Results of Work Zone Air Quality/Fugitive Dust Emission

Sl. No.	Location Name	Station Code	SPM $\mu\text{g}/\text{m}^3$			RSPM $\mu\text{g}/\text{m}^3$		
			Max.	Min.	Avg.	Max.	Min	Avg.
1.	Panposh	F1	539.4	440.3	490.6	105.7	81.6	94.6
2.	D Area	F2	536.9	441.4	490.3	106.7	84.5	94.9
3.	F Area	F3	539.1	445.7	488.2	112.7	80.6	96.9
4.	G Area	F4	529.4	442.7	485.9	108.1	85.1	94.6
5.	Lump Loading Point (near 600TPH)	F5	538.0	452.7	488.5	108.1	82.9	95.7
6.	Fines Loading (20 Area)	F6	535.8	441.2	489.2	107.0	81.2	95.2
7.	Dump Fines handling route	F7	539.6	449.7	496.0	111.7	82.5	97.5
8.	SSP	F8	537.9	444.5	499.7	110.3	81.4	97.4
9.	Dump Fines Handling Site	F9	535.6	441.9	494.2	111.4	79.8	97.1
10.	Mn Quarry	F10	535.6	440.3	483.6	107.8	81.8	95.0
As Per CTO Std.			1200 $\mu\text{g}/\text{m}^3$					

3.2.1 Panposh (F1):

The pollution level in Panposh Quarry for the parameters SPM_{and} RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **539.4** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **440.3** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **81.6** $\mu\text{g}/\text{m}^3$ to **105.7** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/166

Test Report Issue date: 02.10.2025

FUGITIVE EMISSION MONITORING REPORT FOR SEPTEMBER 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **Panposh**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM $\mu\text{g}/\text{m}^3$	RSPM $\mu\text{g}/\text{m}^3$
1.	01-09-2025	Panposh	539.4	100.3
2.	02-09-2025	Panposh	508.6	105.6
3.	03-09-2025	Panposh	522.3	99.4
4.	04-09-2025	Panposh	467.3	95.2
5.	05-09-2025	Panposh	532.2	98.0
6.	06-09-2025	Panposh	440.3	81.6
7.	07-09-2025	Panposh	474.1	95.0
8.	08-09-2025	Panposh	468.3	86.0
9.	09-09-2025	Panposh	469.1	89.6
10.	10-09-2025	Panposh	464.6	86.9
11.	11-09-2025	Panposh	501.2	93.1
12.	12-09-2025	Panposh	455.6	88.2
13.	13-09-2025	Panposh	459.4	86.2
14.	14-09-2025	Panposh	534.9	105.7
15.	15-09-2025	Panposh	476.9	97.7
16.	16-09-2025	Panposh	535.3	97.4
17.	17-09-2025	Panposh	490.7	92.4
18.	18-09-2025	Panposh	455.7	90.7
19.	19-09-2025	Panposh	476.1	88.6
20.	20-09-2025	Panposh	507.8	105.4
21.	21-09-2025	Panposh	466.4	88.5
22.	22-09-2025	Panposh	530.9	101.8
23.	23-09-2025	Panposh	480.1	95.0
24.	24-09-2025	Panposh	532.9	104.7
25.	25-09-2025	Panposh	458.0	96.0
26.	26-09-2025	Panposh	502.5	93.7
27.	27-09-2025	Panposh	516.3	93.6
28.	28-09-2025	Panposh	502.8	97.0
29.	29-09-2025	Panposh	492.3	91.1
30.	30-09-2025	Panposh	456.8	94.8
Average			490.6	94.6

----End of Report----

Verified By

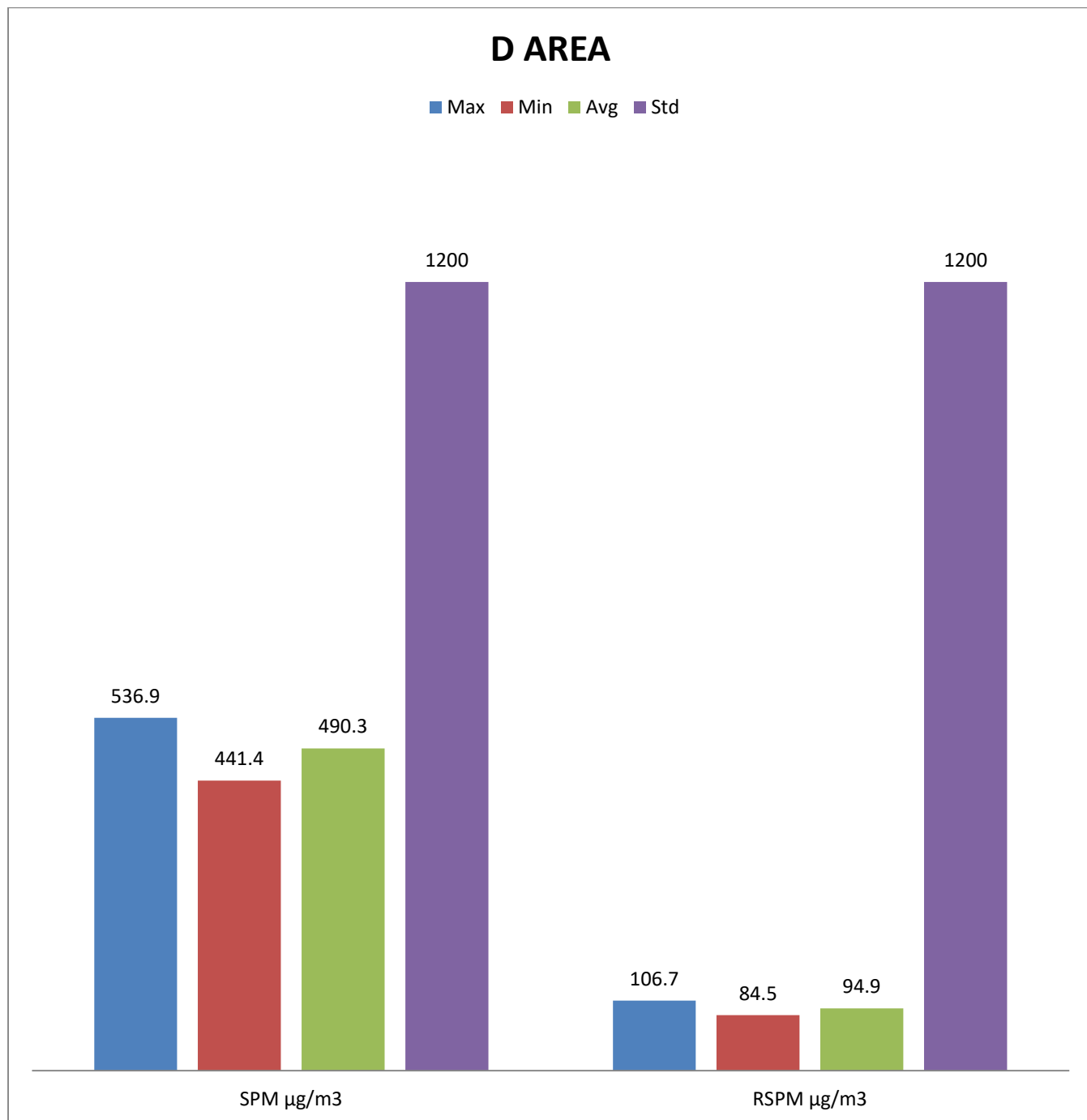

Technical Manager
(Vikas Kumar)

Authorized By


Quality Manager
(Dr. Abhishek Kumar Singh)


3.2.2 D Area(F2)

The pollution level in D Area Quarry for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **536.9** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **441.4** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **84.5** $\mu\text{g}/\text{m}^3$ to **106.7** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/167

Test Report Issue date: 02.10.2025

FUGITIVE EMISSION MONITORING REPORT FOR SEPTEMBER 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **D Area**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM $\mu\text{g}/\text{m}^3$	RSPM $\mu\text{g}/\text{m}^3$
1.	01-09-2025	D Area	452.6	93.2
2.	02-09-2025	D Area	468.9	95.1
3.	03-09-2025	D Area	492.0	97.3
4.	04-09-2025	D Area	527.0	99.9
5.	05-09-2025	D Area	451.1	84.6
6.	06-09-2025	D Area	527.9	101.4
7.	07-09-2025	D Area	521.9	99.5
8.	08-09-2025	D Area	464.8	92.6
9.	09-09-2025	D Area	496.8	96.7
10.	10-09-2025	D Area	446.5	93.1
11.	11-09-2025	D Area	494.5	95.1
12.	12-09-2025	D Area	532.3	106.7
13.	13-09-2025	D Area	484.5	97.8
14.	14-09-2025	D Area	506.0	102.2
15.	15-09-2025	D Area	441.4	87.2
16.	16-09-2025	D Area	536.9	102.2
17.	17-09-2025	D Area	510.0	103.0
18.	18-09-2025	D Area	508.8	94.1
19.	19-09-2025	D Area	477.5	86.5
20.	20-09-2025	D Area	445.6	91.3
21.	21-09-2025	D Area	499.8	94.7
22.	22-09-2025	D Area	520.4	102.6
23.	23-09-2025	D Area	514.4	93.7
24.	24-09-2025	D Area	457.8	88.6
25.	25-09-2025	D Area	485.9	93.5
26.	26-09-2025	D Area	504.0	91.0
27.	27-09-2025	D Area	485.1	88.9
28.	28-09-2025	D Area	475.1	92.9
29.	29-09-2025	D Area	455.4	84.5
30.	30-09-2025	D Area	523.9	95.8
Average			490.3	94.9

----End of Report----

Verified By

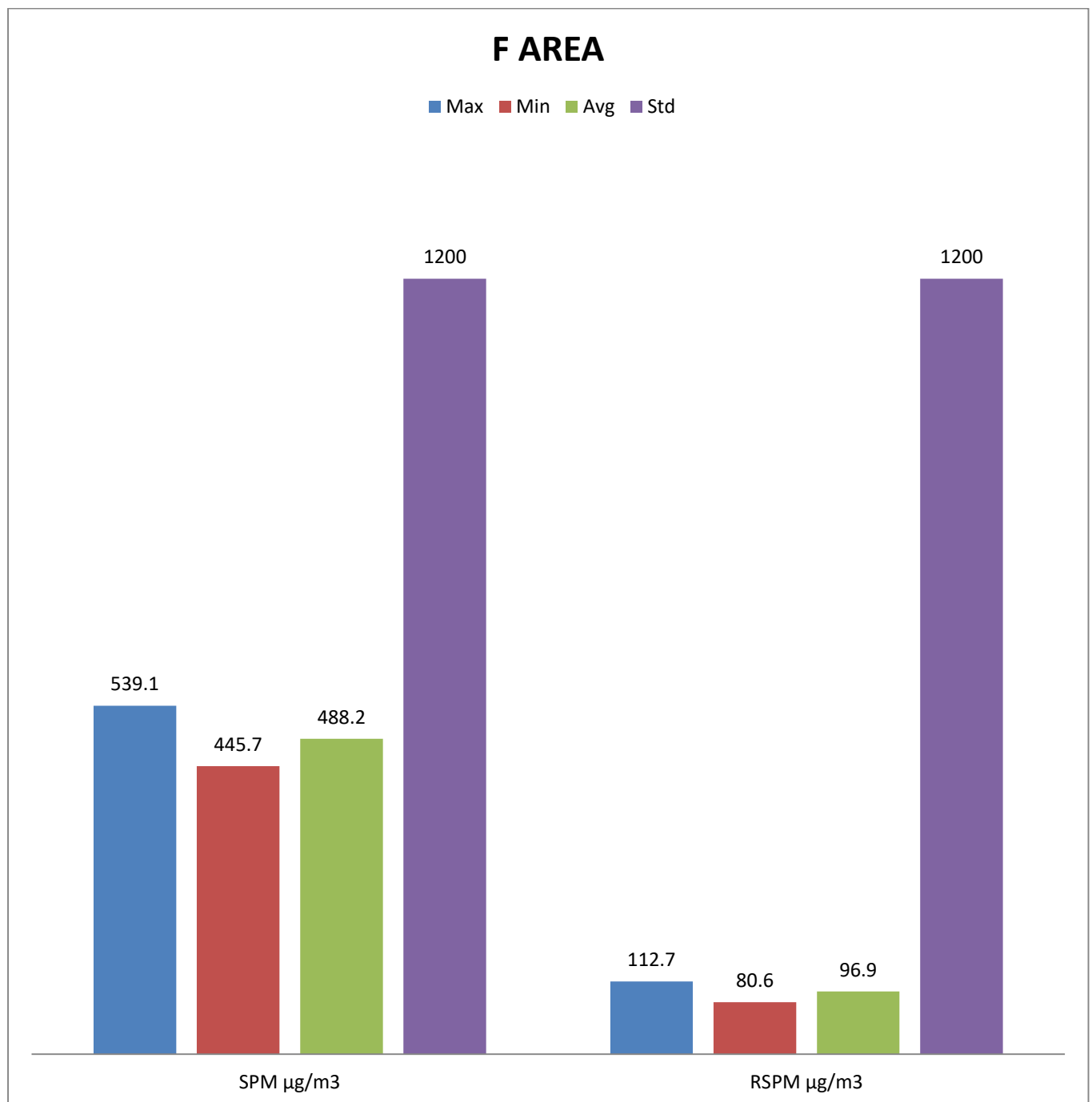

 Technical Manager
 (Vikas Kumar)

Authorized By


 Quality Manager
 (Dr. Abhishek Kumar Singh)


3.2.3 F Area(F3)

The pollution level in F Area Quarry for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **539.1** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **445.7** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **80.6** $\mu\text{g}/\text{m}^3$ to **112.7** $\mu\text{g}/\text{m}^3$ during the month



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/168

Test Report Issue date: 02.10.2025

FUGITIVE EMISSION MONITORING REPORT FOR SEPTEMBER 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **F Area**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM $\mu\text{g}/\text{m}^3$	RSPM $\mu\text{g}/\text{m}^3$
1.	01-09-2025	F Area	468.3	97.2
2.	02-09-2025	F Area	537.4	112.7
3.	03-09-2025	F Area	449.7	90.1
4.	04-09-2025	F Area	455.0	84.8
5.	05-09-2025	F Area	524.6	109.5
6.	06-09-2025	F Area	452.2	91.6
7.	07-09-2025	F Area	509.6	94.1
8.	08-09-2025	F Area	486.6	97.2
9.	09-09-2025	F Area	493.9	102.6
10.	10-09-2025	F Area	505.6	91.8
11.	11-09-2025	F Area	539.1	109.5
12.	12-09-2025	F Area	445.7	80.6
13.	13-09-2025	F Area	489.7	99.8
14.	14-09-2025	F Area	536.7	106.4
15.	15-09-2025	F Area	459.0	85.9
16.	16-09-2025	F Area	446.4	91.7
17.	17-09-2025	F Area	458.0	88.8
18.	18-09-2025	F Area	478.8	99.6
19.	19-09-2025	F Area	510.6	104.9
20.	20-09-2025	F Area	500.5	91.0
21.	21-09-2025	F Area	481.8	95.8
22.	22-09-2025	F Area	463.1	92.5
23.	23-09-2025	F Area	492.3	98.8
24.	24-09-2025	F Area	505.9	95.5
25.	25-09-2025	F Area	507.2	96.2
26.	26-09-2025	F Area	469.4	92.5
27.	27-09-2025	F Area	486.8	102.2
28.	28-09-2025	F Area	469.6	91.3
29.	29-09-2025	F Area	488.0	101.2
30.	30-09-2025	F Area	534.6	112.1
Average			488.2	96.9

----End of Report----

Verified By

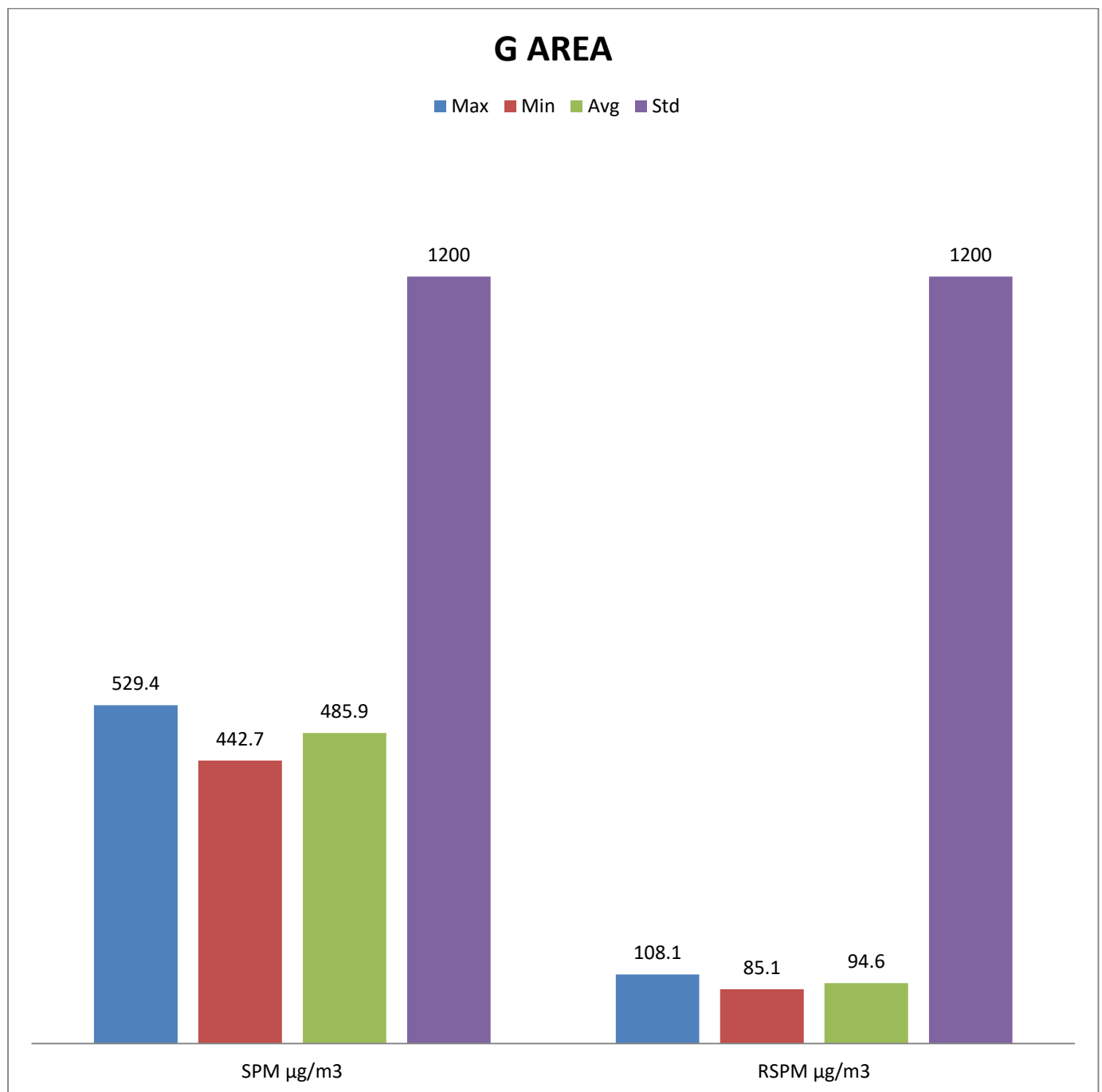

 Technical Manager
 (Vikas Kumar)

Authorized By


 Quality Manager
 (Dr. Abhishek Kumar Singh)


3.2.4 G Area(F4)

The pollution level in G Area Quarry for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **529.4** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **442.7** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **85.1** $\mu\text{g}/\text{m}^3$ to **108.1** $\mu\text{g}/\text{m}^3$ during the month



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/169


Test Report Issue date: 02.10.2025



FUGITIVE EMISSION MONITORING REPORT FOR SEPTEMBER 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **G Area**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM $\mu\text{g}/\text{m}^3$	RSPM $\mu\text{g}/\text{m}^3$
1.	01-09-2025	G Area	511.3	96.9
2.	02-09-2025	G Area	467.9	85.1
3.	03-09-2025	G Area	529.4	108.1
4.	04-09-2025	G Area	453.1	88.7
5.	05-09-2025	G Area	513.2	106.4
6.	06-09-2025	G Area	497.5	97.9
7.	07-09-2025	G Area	497.8	101.8
8.	08-09-2025	G Area	509.2	101.6
9.	09-09-2025	G Area	497.5	90.0
10.	10-09-2025	G Area	442.7	92.5
11.	11-09-2025	G Area	505.9	99.6
12.	12-09-2025	G Area	447.4	89.2
13.	13-09-2025	G Area	481.9	89.4
14.	14-09-2025	G Area	451.5	92.1
15.	15-09-2025	G Area	520.1	102.1
16.	16-09-2025	G Area	511.4	92.3
17.	17-09-2025	G Area	446.3	85.3
18.	18-09-2025	G Area	450.4	93.4
19.	19-09-2025	G Area	480.5	87.7
20.	20-09-2025	G Area	520.0	96.7
21.	21-09-2025	G Area	492.1	91.8
22.	22-09-2025	G Area	466.6	91.8
23.	23-09-2025	G Area	492.1	98.9
24.	24-09-2025	G Area	501.3	103.0
25.	25-09-2025	G Area	465.2	87.5
26.	26-09-2025	G Area	494.0	92.5
27.	27-09-2025	G Area	504.6	101.1
28.	28-09-2025	G Area	458.1	91.6
29.	29-09-2025	G Area	504.3	96.5
30.	30-09-2025	G Area	463.6	87.3
Average			485.9	94.6

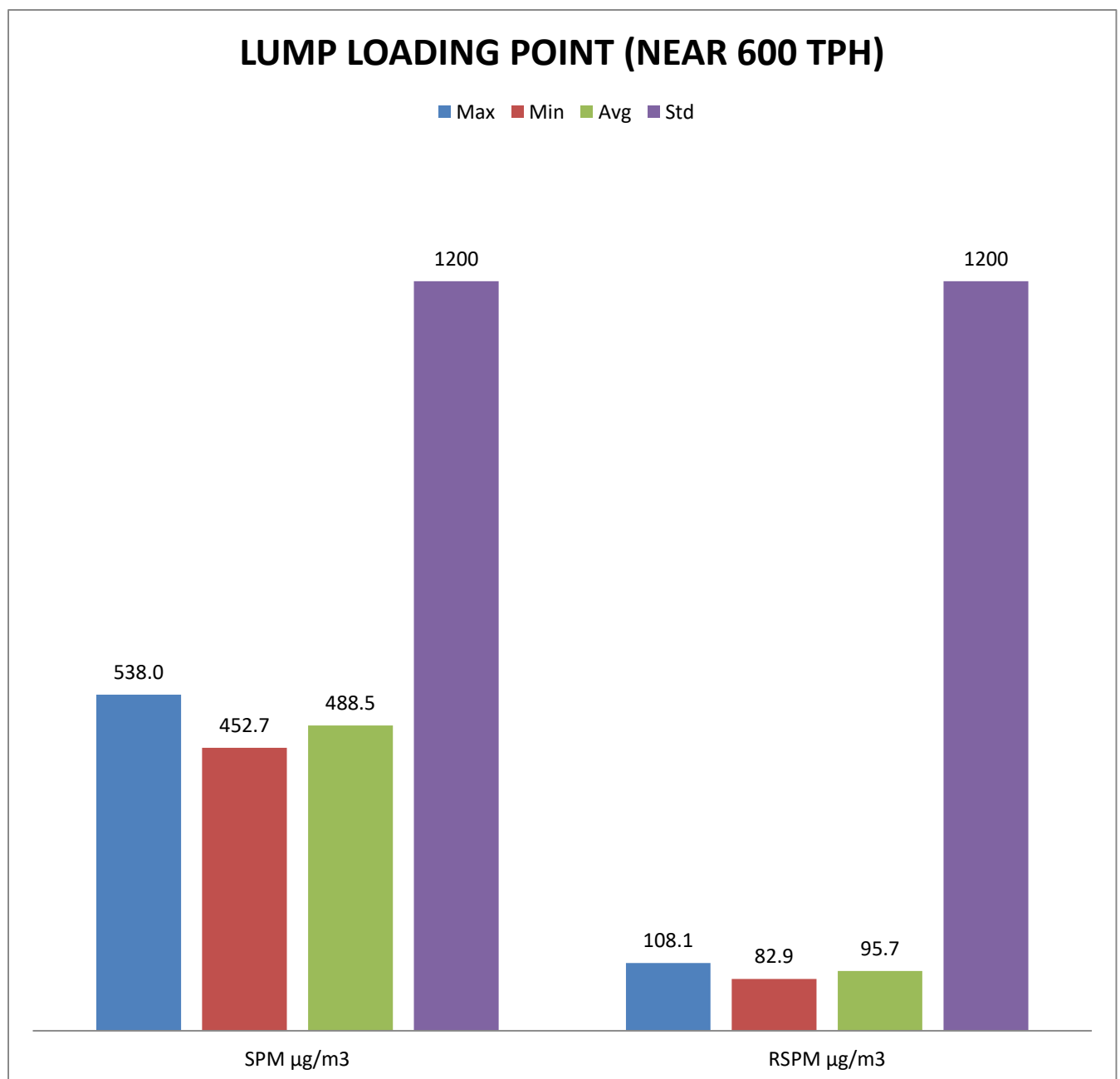
----End of Report----

Verified By

Technical Manager
(Vikas Kumar)

Authorized By

Quality Manager
(Dr. Abhishek Kumar Singh)


3.2.5 Lump Loading Point (Near 600 TPH) (F5)

The pollution level in Lump Loading Point (Near 600 TPH) for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **538.0** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **452.7** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **82.9** $\mu\text{g}/\text{m}^3$ to **108.1** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/170

Test Report Issue date: 02.10.2025

FUGITIVE EMISSION MONITORING REPORT FOR SEPTEMBER 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **Lump Loading Point (Near 600 TPH)**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM $\mu\text{g}/\text{m}^3$	RSPM $\mu\text{g}/\text{m}^3$
1.	01-09-2025	Lump Loading Point (Near 600 TPH)	453.6	86.6
2.	02-09-2025	Lump Loading Point (Near 600 TPH)	493.4	99.4
3.	03-09-2025	Lump Loading Point (Near 600 TPH)	524.0	95.2
4.	04-09-2025	Lump Loading Point (Near 600 TPH)	453.3	86.3
5.	05-09-2025	Lump Loading Point (Near 600 TPH)	456.3	83.5
6.	06-09-2025	Lump Loading Point (Near 600 TPH)	486.6	101.3
7.	07-09-2025	Lump Loading Point (Near 600 TPH)	494.8	96.3
8.	08-09-2025	Lump Loading Point (Near 600 TPH)	521.7	97.2
9.	09-09-2025	Lump Loading Point (Near 600 TPH)	523.0	104.8
10.	10-09-2025	Lump Loading Point (Near 600 TPH)	455.3	86.8
11.	11-09-2025	Lump Loading Point (Near 600 TPH)	475.8	97.0
12.	12-09-2025	Lump Loading Point (Near 600 TPH)	482.7	101.2
13.	13-09-2025	Lump Loading Point (Near 600 TPH)	505.7	103.7
14.	14-09-2025	Lump Loading Point (Near 600 TPH)	508.3	100.4
15.	15-09-2025	Lump Loading Point (Near 600 TPH)	464.4	87.2
16.	16-09-2025	Lump Loading Point (Near 600 TPH)	467.5	97.0
17.	17-09-2025	Lump Loading Point (Near 600 TPH)	504.0	104.4
18.	18-09-2025	Lump Loading Point (Near 600 TPH)	509.6	96.6
19.	19-09-2025	Lump Loading Point (Near 600 TPH)	522.8	108.1
20.	20-09-2025	Lump Loading Point (Near 600 TPH)	476.1	99.7
21.	21-09-2025	Lump Loading Point (Near 600 TPH)	477.4	95.2
22.	22-09-2025	Lump Loading Point (Near 600 TPH)	487.7	92.5
23.	23-09-2025	Lump Loading Point (Near 600 TPH)	452.7	82.9
24.	24-09-2025	Lump Loading Point (Near 600 TPH)	465.9	86.0
25.	25-09-2025	Lump Loading Point (Near 600 TPH)	488.5	88.3
26.	26-09-2025	Lump Loading Point (Near 600 TPH)	501.1	102.3
27.	27-09-2025	Lump Loading Point (Near 600 TPH)	470.2	87.2
28.	28-09-2025	Lump Loading Point (Near 600 TPH)	504.7	102.9
29.	29-09-2025	Lump Loading Point (Near 600 TPH)	490.8	100.7
30.	30-09-2025	Lump Loading Point (Near 600 TPH)	538.0	101.1
Average			488.5	95.7

----End of Report----

Verified By

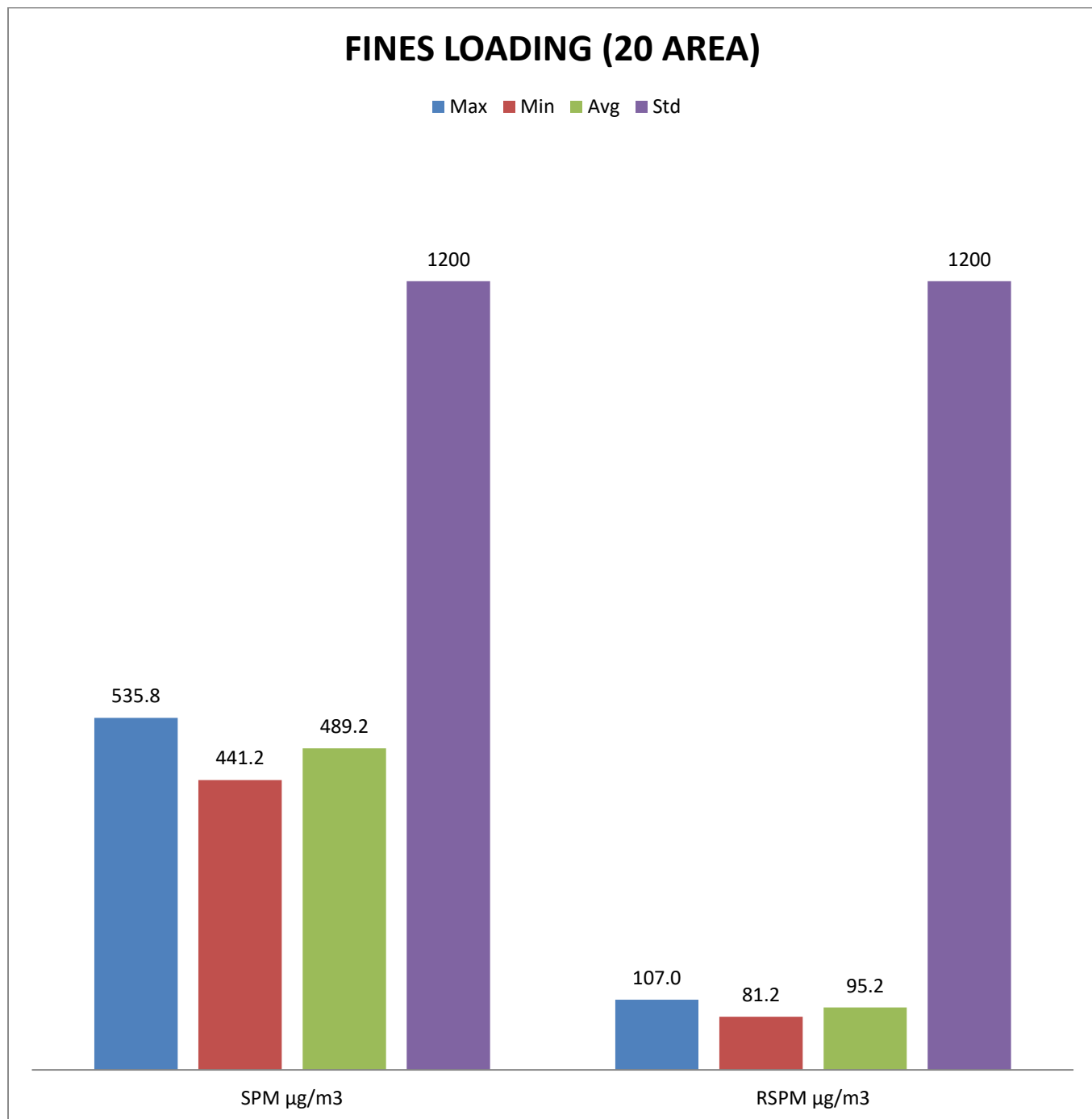

 Technical Manager
 (Vikas Kumar)

Authorized By


 Quantity Manager
 (Dr. Abhishek Kumar Singh)


3.2.6 Fines Loading (20 area) (F6)

The pollution level in Fines Loading (20 area) for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **535.8 $\mu\text{g}/\text{m}^3$** whereas minimum concentration was observed **441.2 $\mu\text{g}/\text{m}^3$** and RSPM concentration ranges between **81.2 $\mu\text{g}/\text{m}^3$** to **107.0 $\mu\text{g}/\text{m}^3$** during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/171

Test Report Issue date: 02.10.2025

FUGITIVE EMISSION MONITORING REPORT FOR SEPTEMBER 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **Fines Loading (20 area)**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM $\mu\text{g}/\text{m}^3$	RSPM $\mu\text{g}/\text{m}^3$
1.	01-09-2025	Fines Loading (20 area)	519.0	101.3
2.	02-09-2025	Fines Loading (20 area)	476.6	98.0
3.	03-09-2025	Fines Loading (20 area)	468.0	84.4
4.	04-09-2025	Fines Loading (20 area)	450.2	84.9
5.	05-09-2025	Fines Loading (20 area)	511.6	100.4
6.	06-09-2025	Fines Loading (20 area)	502.8	102.8
7.	07-09-2025	Fines Loading (20 area)	466.7	86.2
8.	08-09-2025	Fines Loading (20 area)	527.7	107.0
9.	09-09-2025	Fines Loading (20 area)	483.9	90.2
10.	10-09-2025	Fines Loading (20 area)	467.1	93.3
11.	11-09-2025	Fines Loading (20 area)	535.8	99.2
12.	12-09-2025	Fines Loading (20 area)	487.0	96.1
13.	13-09-2025	Fines Loading (20 area)	503.3	102.4
14.	14-09-2025	Fines Loading (20 area)	512.2	102.1
15.	15-09-2025	Fines Loading (20 area)	502.3	94.5
16.	16-09-2025	Fines Loading (20 area)	459.2	82.7
17.	17-09-2025	Fines Loading (20 area)	441.2	81.2
18.	18-09-2025	Fines Loading (20 area)	487.0	93.0
19.	19-09-2025	Fines Loading (20 area)	524.0	98.3
20.	20-09-2025	Fines Loading (20 area)	508.0	100.5
21.	21-09-2025	Fines Loading (20 area)	485.2	88.5
22.	22-09-2025	Fines Loading (20 area)	466.8	89.7
23.	23-09-2025	Fines Loading (20 area)	498.3	103.6
24.	24-09-2025	Fines Loading (20 area)	498.8	100.9
25.	25-09-2025	Fines Loading (20 area)	515.9	96.6
26.	26-09-2025	Fines Loading (20 area)	467.6	97.8
27.	27-09-2025	Fines Loading (20 area)	455.9	88.8
28.	28-09-2025	Fines Loading (20 area)	526.5	100.5
29.	29-09-2025	Fines Loading (20 area)	476.3	98.9
30.	30-09-2025	Fines Loading (20 area)	451.4	91.4
Average			489.2	95.2

----End of Report----

Verified By

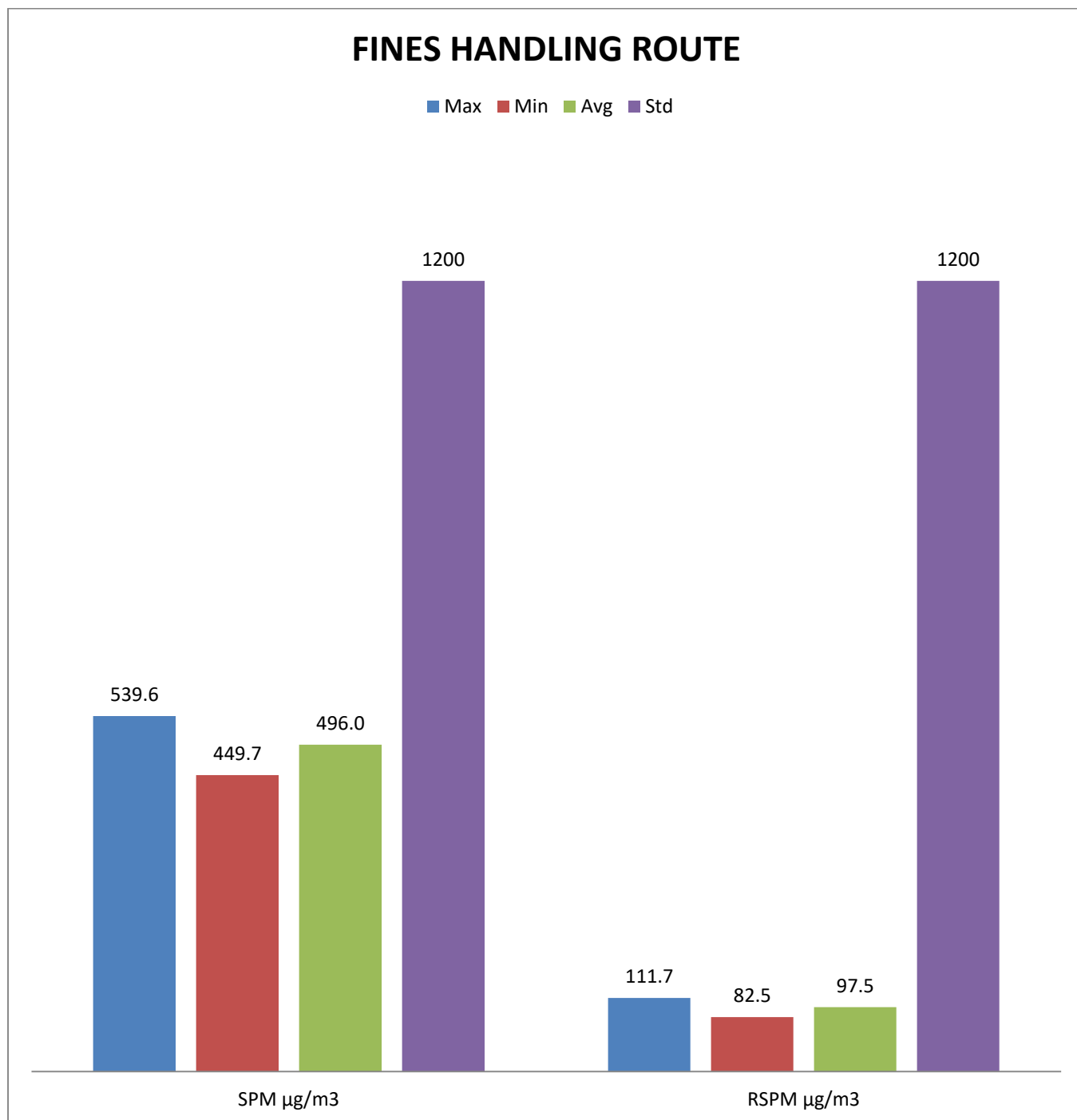

 Technical Manager
 (Vikas Kumar)

Authorized By


 Quality Manager
 (Dr. Abhishek Kumar Singh)


3.2.7 Fines Handling Route (F7)

The pollution level in Fines Handling Route for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **539.6** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **449.7** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **82.5** $\mu\text{g}/\text{m}^3$ to **111.7** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/172

Test Report Issue date: 02.10.2025

FUGITIVE EMISSION MONITORING REPORT FOR SEPTEMBER 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **Fines Handling Route**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM $\mu\text{g}/\text{m}^3$	RSPM $\mu\text{g}/\text{m}^3$
1.	01-09-2025	Fines Handling Route	531.9	110.4
2.	02-09-2025	Fines Handling Route	456.1	82.5
3.	03-09-2025	Fines Handling Route	520.4	108.8
4.	04-09-2025	Fines Handling Route	535.8	108.1
5.	05-09-2025	Fines Handling Route	485.0	88.5
6.	06-09-2025	Fines Handling Route	493.6	100.1
7.	07-09-2025	Fines Handling Route	536.5	97.5
8.	08-09-2025	Fines Handling Route	468.5	90.8
9.	09-09-2025	Fines Handling Route	534.1	106.3
10.	10-09-2025	Fines Handling Route	519.6	103.3
11.	11-09-2025	Fines Handling Route	489.3	102.5
12.	12-09-2025	Fines Handling Route	510.4	97.6
13.	13-09-2025	Fines Handling Route	515.2	104.4
14.	14-09-2025	Fines Handling Route	539.6	111.7
15.	15-09-2025	Fines Handling Route	505.7	95.3
16.	16-09-2025	Fines Handling Route	452.5	85.8
17.	17-09-2025	Fines Handling Route	454.4	94.6
18.	18-09-2025	Fines Handling Route	449.7	87.0
19.	19-09-2025	Fines Handling Route	454.3	85.3
20.	20-09-2025	Fines Handling Route	535.9	108.0
21.	21-09-2025	Fines Handling Route	510.8	95.5
22.	22-09-2025	Fines Handling Route	472.1	86.0
23.	23-09-2025	Fines Handling Route	529.1	101.9
24.	24-09-2025	Fines Handling Route	474.8	97.7
25.	25-09-2025	Fines Handling Route	480.8	97.4
26.	26-09-2025	Fines Handling Route	470.1	90.9
27.	27-09-2025	Fines Handling Route	479.5	97.0
28.	28-09-2025	Fines Handling Route	485.3	98.4
29.	29-09-2025	Fines Handling Route	471.7	97.9
30.	30-09-2025	Fines Handling Route	517.2	93.6
Average			496.0	97.5

----End of Report----

Verified By

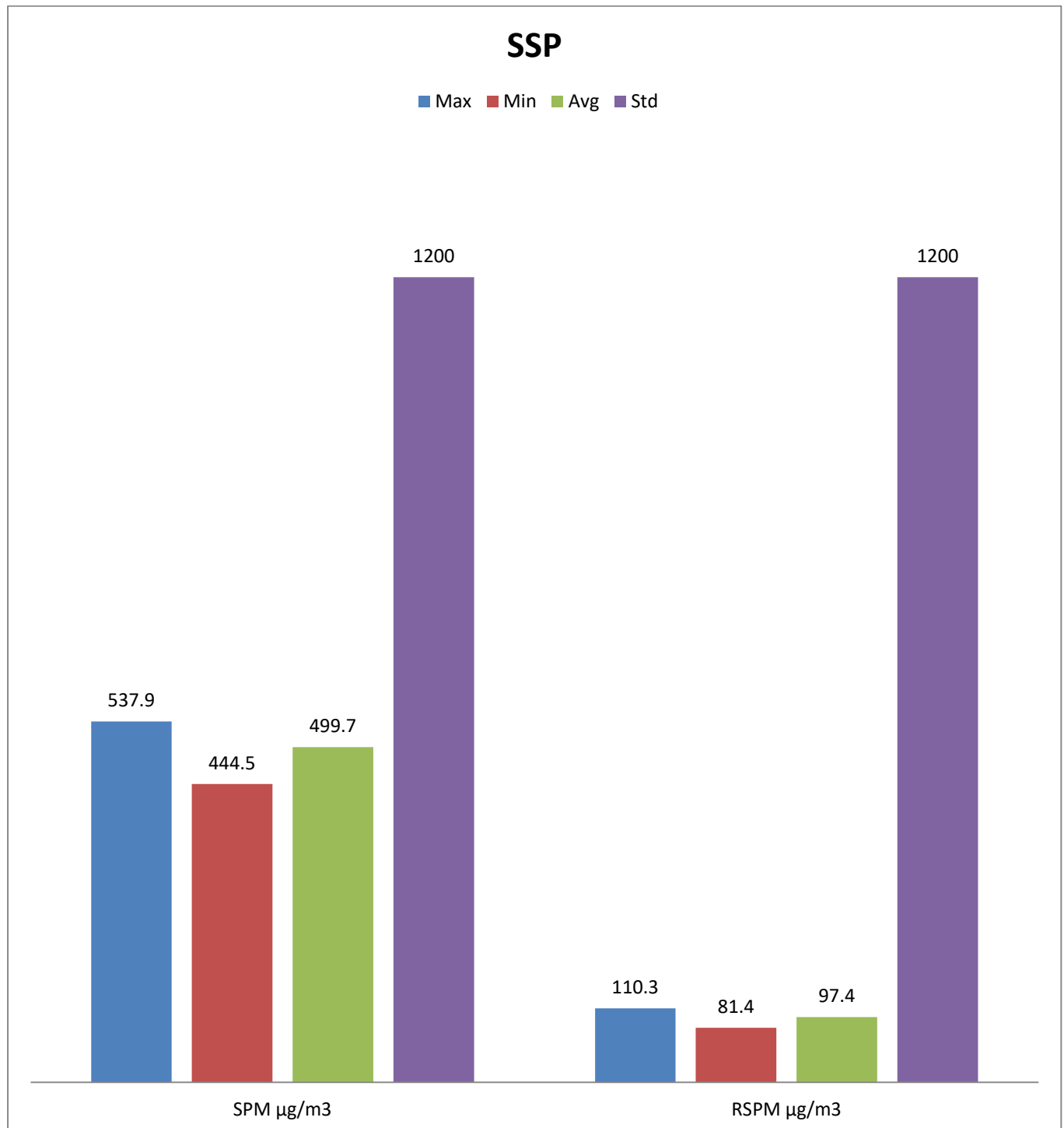

 Technical Manager
 (Vikas Kumar)

Authorized By


 Quality Manager
 (Dr. Abhishek Kumar Singh)


3.2.8 SSP (F8)

The pollution level in SSP Quarry for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **537.9** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **444.5** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **81.4** $\mu\text{g}/\text{m}^3$ to **110.3** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/173

Test Report Issue date: 02.10.2025

FUGITIVE EMISSION MONITORING REPORT FOR SEPTEMBER 2025

1. Name of Industry : Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha
2. Monitoring Instruments : RDS (APM 460 BL)
3. Sampling Location : SSP
4. Sample collected by : EMPL representative in presence of Client's representative.

Sl. No.	Date	Sampling Location	Parameter	
			SPM $\mu\text{g}/\text{m}^3$	RSPM $\mu\text{g}/\text{m}^3$
1.	01-09-2025	SSP	482.3	90.1
2.	02-09-2025	SSP	444.5	83.0
3.	03-09-2025	SSP	535.4	102.3
4.	04-09-2025	SSP	507.9	105.8
5.	05-09-2025	SSP	467.6	90.6
6.	06-09-2025	SSP	459.3	93.7
7.	07-09-2025	SSP	473.3	97.3
8.	08-09-2025	SSP	473.2	95.4
9.	09-09-2025	SSP	481.9	98.2
10.	10-09-2025	SSP	469.8	93.0
11.	11-09-2025	SSP	529.2	110.3
12.	12-09-2025	SSP	522.2	96.7
13.	13-09-2025	SSP	537.9	97.9
14.	14-09-2025	SSP	488.7	89.4
15.	15-09-2025	SSP	445.9	81.4
16.	16-09-2025	SSP	523.5	98.0
17.	17-09-2025	SSP	512.2	103.3
18.	18-09-2025	SSP	530.5	104.7
19.	19-09-2025	SSP	510.2	96.9
20.	20-09-2025	SSP	519.7	107.7
21.	21-09-2025	SSP	515.8	102.4
22.	22-09-2025	SSP	476.2	92.5
23.	23-09-2025	SSP	484.5	100.5
24.	24-09-2025	SSP	466.6	86.5
25.	25-09-2025	SSP	524.9	97.9
26.	26-09-2025	SSP	516.7	99.2
27.	27-09-2025	SSP	510.3	93.9
28.	28-09-2025	SSP	526.8	110.3
29.	29-09-2025	SSP	523.3	99.9
30.	30-09-2025	SSP	529.8	101.9
Average			499.7	97.4

----End of Report----

Verified By

Technical Manager
(Vikas Kumar)

Authorized By

Quality Manager
(Dr. Abhishek Kumar Singh)

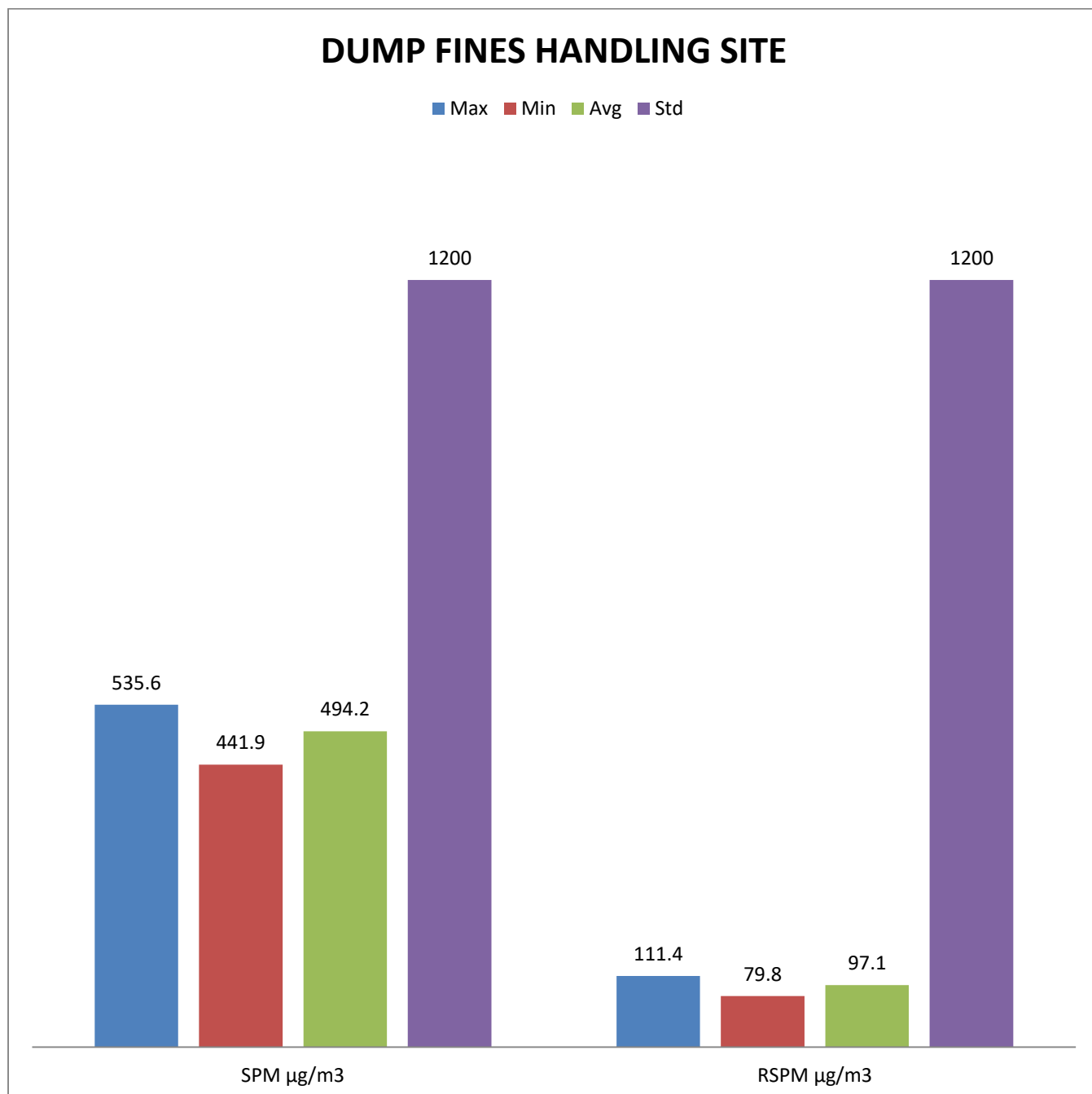


(Vikas Kumar)

(Abhishek Kumar Singh)

3.2.9 Dump Fines Handling Site (F9)

The pollution level in Dump Fines Handling Site for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **535.6** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **441.9** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **79.8** $\mu\text{g}/\text{m}^3$ to **111.4** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/174

Test Report Issue date: 02.10.2025

FUGITIVE EMISSION MONITORING REPORT FOR SEPTEMBER 2025

1. Name of Industry : **Steel Authority of India limited,**
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **Dump Fines Handling Site**
4. Sample collected by : **EMPL representative in presence of Client's representative.**


Sl. No.	Date	Sampling Location	Parameter	
			SPM $\mu\text{g}/\text{m}^3$	RSPM $\mu\text{g}/\text{m}^3$
1.	01-09-2025	Dump Fines Handling Site	508.2	91.9
2.	02-09-2025	Dump Fines Handling Site	503.1	98.0
3.	03-09-2025	Dump Fines Handling Site	522.8	108.8
4.	04-09-2025	Dump Fines Handling Site	535.0	111.4
5.	05-09-2025	Dump Fines Handling Site	494.3	99.6
6.	06-09-2025	Dump Fines Handling Site	475.6	90.5
7.	07-09-2025	Dump Fines Handling Site	485.4	88.6
8.	08-09-2025	Dump Fines Handling Site	507.0	98.4
9.	09-09-2025	Dump Fines Handling Site	511.3	102.9
10.	10-09-2025	Dump Fines Handling Site	535.6	103.7
11.	11-09-2025	Dump Fines Handling Site	526.1	104.0
12.	12-09-2025	Dump Fines Handling Site	503.1	95.3
13.	13-09-2025	Dump Fines Handling Site	469.3	90.9
14.	14-09-2025	Dump Fines Handling Site	441.9	79.8
15.	15-09-2025	Dump Fines Handling Site	451.9	82.6
16.	16-09-2025	Dump Fines Handling Site	474.5	98.0
17.	17-09-2025	Dump Fines Handling Site	493.1	100.0
18.	18-09-2025	Dump Fines Handling Site	445.0	89.5
19.	19-09-2025	Dump Fines Handling Site	523.5	106.7
20.	20-09-2025	Dump Fines Handling Site	461.8	94.2
21.	21-09-2025	Dump Fines Handling Site	448.1	92.3
22.	22-09-2025	Dump Fines Handling Site	483.1	88.8
23.	23-09-2025	Dump Fines Handling Site	496.3	102.6
24.	24-09-2025	Dump Fines Handling Site	528.3	100.1
25.	25-09-2025	Dump Fines Handling Site	527.8	109.3
26.	26-09-2025	Dump Fines Handling Site	457.8	90.4
27.	27-09-2025	Dump Fines Handling Site	499.4	91.1
28.	28-09-2025	Dump Fines Handling Site	464.6	91.0
29.	29-09-2025	Dump Fines Handling Site	535.5	108.5
30.	30-09-2025	Dump Fines Handling Site	517.1	105.0
Average			494.2	97.1

----End of Report----

Verified By


 Technical Manager
 (Vikas Kumar)

Authorized By

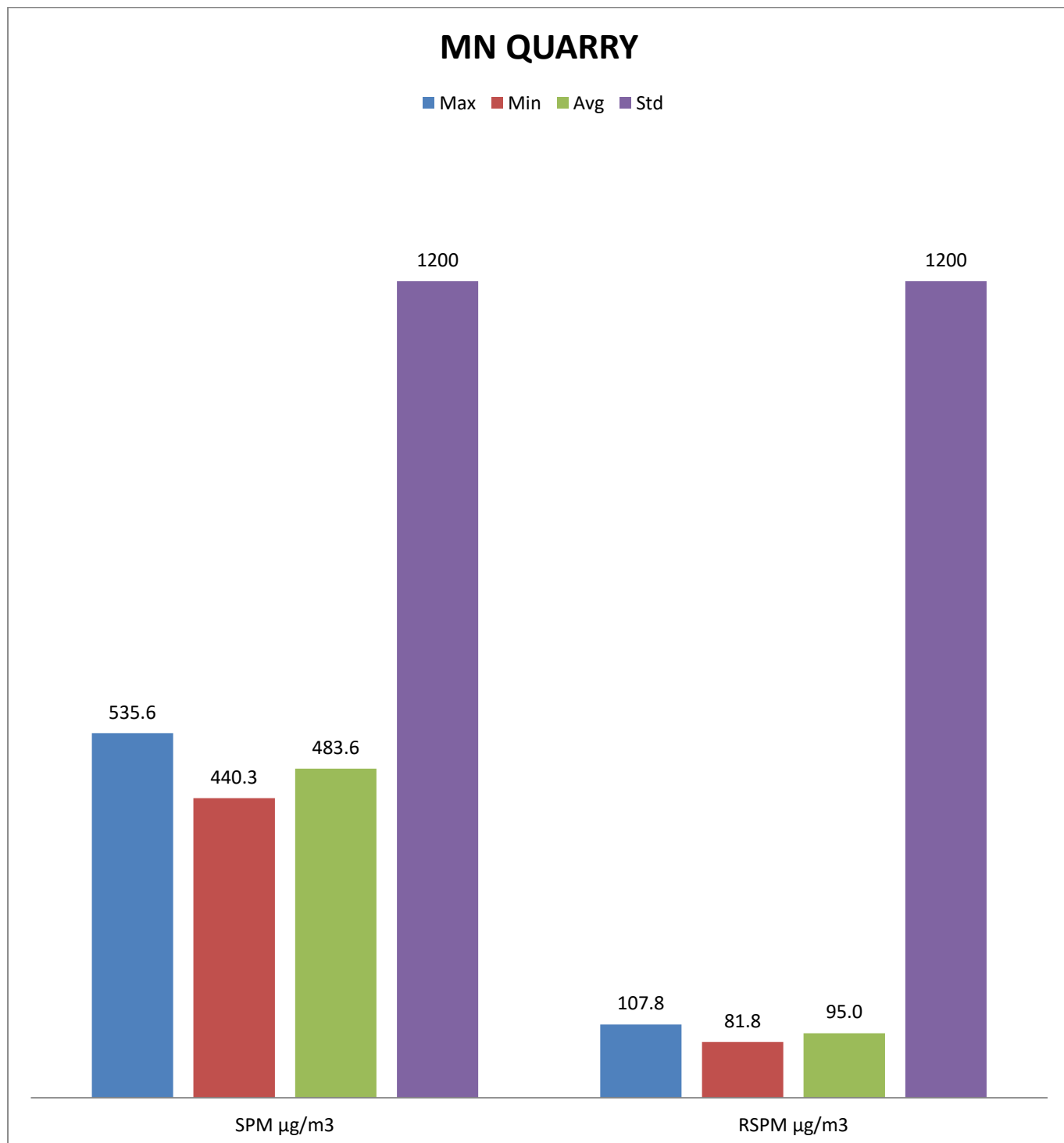

 Quality Manager
 (Dr. Abhishek Kumar Singh)


(Vikas Kumar)

(Abhishek Kumar Singh)

3.2.10 Mn Quarry (F5)

The pollution level in Mn Quarry for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **535.6** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **440.3** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **81.8** $\mu\text{g}/\text{m}^3$ to **107.8** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/175

Test Report Issue date: 02.10.2025

FUGITIVE EMISSION MONITORING REPORT FOR SEPTEMBER 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **Mn Quarry**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM $\mu\text{g}/\text{m}^3$	RSPM $\mu\text{g}/\text{m}^3$
1.	01-09-2025	Mn Quarry	515.9	107.1
2.	02-09-2025	Mn Quarry	477.8	87.1
3.	03-09-2025	Mn Quarry	474.1	93.5
4.	04-09-2025	Mn Quarry	483.5	95.3
5.	05-09-2025	Mn Quarry	534.0	97.3
6.	06-09-2025	Mn Quarry	505.9	105.9
7.	07-09-2025	Mn Quarry	501.4	99.3
8.	08-09-2025	Mn Quarry	454.4	81.8
9.	09-09-2025	Mn Quarry	535.6	98.5
10.	10-09-2025	Mn Quarry	507.7	97.5
11.	11-09-2025	Mn Quarry	449.0	91.9
12.	12-09-2025	Mn Quarry	468.7	97.9
13.	13-09-2025	Mn Quarry	483.8	93.5
14.	14-09-2025	Mn Quarry	457.0	92.4
15.	15-09-2025	Mn Quarry	458.6	86.5
16.	16-09-2025	Mn Quarry	484.2	96.5
17.	17-09-2025	Mn Quarry	504.8	99.4
18.	18-09-2025	Mn Quarry	520.2	96.5
19.	19-09-2025	Mn Quarry	440.3	82.0
20.	20-09-2025	Mn Quarry	471.0	96.5
21.	21-09-2025	Mn Quarry	483.8	99.2
22.	22-09-2025	Mn Quarry	449.6	86.4
23.	23-09-2025	Mn Quarry	462.6	83.4
24.	24-09-2025	Mn Quarry	466.7	95.1
25.	25-09-2025	Mn Quarry	454.7	91.8
26.	26-09-2025	Mn Quarry	509.6	98.5
27.	27-09-2025	Mn Quarry	455.9	91.2
28.	28-09-2025	Mn Quarry	497.1	100.8
29.	29-09-2025	Mn Quarry	526.5	107.8
30.	30-09-2025	Mn Quarry	474.1	98.2
Average			483.6	95.0

----End of Report----

Verified By


 Technical Manager
 (Vikas Kumar)

Authorized By


 Quality Manager
 (Dr. Abhishek Kumar Singh)


(Vikas Kumar)

(Abhishek Kumar Singh)

3.3 Surface/Effluent/Drinking Water Quality:

As per the guideline of CPCB, the following criteria shall be taken into consideration for use of the surface water bodies. Reports below shows the surface water quality analysis results at identified locations near the ML area.

Designated-Best-Use	Class of water	Criteria
Drinking Water Source without conventional treatment but after disinfection	A	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 50 or less pH between 6.5 and 8.5 Dissolved Oxygen 6mg/l or more Biochemical Oxygen Demand 5 days 20C 2mg/l or less
Outdoor bathing (Organized)	B	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 500 or less pH between 6.5 and 8.5 Dissolved Oxygen 5mg/l or more Biochemical Oxygen Demand 5 days 20C 3mg/l or less
Drinking water source after conventional treatment and disinfection	C	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 5000 or less pH between 6 to 9 Dissolved Oxygen 4mg/l or more Biochemical Oxygen Demand 5 days 20C 3mg/l or less
Propagation of Wild life and Fisheries	D	<ul style="list-style-type: none"> pH between 6.5 to 8.5 Dissolved Oxygen 4mg/l or more Free Ammonia (as N) 1.2 mg/l or less
Irrigation, Industrial Cooling, Controlled Waste disposal	E	<ul style="list-style-type: none"> pH between 6.0 to 8.5 Electrical Conductivity at 25C micro mhos/cm Max. 2250 Sodium absorption Ratio Max. 26 Boron Max. 2mg/l
	Below-E	Not Meeting A, B, C, D & E Criteria

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Steel Authority of India limited, Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha	Test Report No.	ECO/LAB/SW/0088/0380/08/2025
		Issue Date of Test Report	05.10.2025
Type of Sample	Surface Water		
Sample Registration No.	0088	Name of Location	Karo Near Lease Boundary at Linture Village
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	12.09.2025	Time of Sample Collection	-
Date of Sample Receipt	15.09.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	15.09.2025	End Date of Analysis	30.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0380/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.20	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	26.0	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	1 -1000	22.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	2.4	3.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A,B,D	0.05 -10	0.14	1.5
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A.C	5-100	<5	50
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B	0.01-2	<0.01	0.2
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-20	<0.05	0.05
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.02-50	0.18	3.0
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 CRA,B	0.05-5	<0.05	1.5
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-50	0.12	15.0
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05 - 10	<0.05	0.005
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05-10	<0.05	-
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.001-1	<0.001	-
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5.0	<0.1	-
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.01	0.1
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.002	0.01
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.02	-
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By


 Technical Manager
 (Vikas Kumar)

Authorized By


 Quality Manager
 (Dr. Abhishek Kumar Singh)


TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Steel Authority of India limited, Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha	Test Report No.	ECO/LAB/SW/0088/0381/08/2025
		Issue Date of Test Report	05.10.2025
Type of Sample	Surface Water		
Sample Registration No.	0088	Name of Location	Jhikaria Nalla before Joining Karo River
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	12.09.2025	Time of Sample Collection	-
Date of Sample Receipt	15.09.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	15.09.2025	End Date of Analysis	30.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0381/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.31	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	28.0	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A,C	1 -1000	30.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	2.2	3.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	0.05 -10	0.10	1.5
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A.C	5-100	5.44	50
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B	0.01-2	<0.01	0.2
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-20	<0.05	0.05
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.02-50	0.20	3.0
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 CRA,B	0.05-5	<0.05	1.5
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-50	0.06	15.0
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05 - 10	<0.05	0.005
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05-10	<0.05	-
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.001-1	<0.001	-
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5.0	<0.1	-
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.01	0.1
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.002	0.01
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.02	-
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23 rd Ed: 2017	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By

(Signature)
Technical Manager
(Vikas Kumar)

Authorized By

(Signature)
Quality Manager
(Dr. Abhishek Kumar Singh)



TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Steel Authority of India limited, Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha	Test Report No.	ECO/LAB/SW/0088/0382/08/2025
		Issue Date of Test Report	05.10.2025
Type of Sample	Surface Water		
Sample Registration No.	0088	Name of Location	Panpash Nallah
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	12.09.2025	Time of Sample Collection	-
Date of Sample Receipt	15.09.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	15.09.2025	End Date of Analysis	30.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0382/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.38	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	24.0	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A,C	1 -1000	27.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	2.8	3.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A,B,D	0.05 -10	0.14	1.5
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A,C	5-100	6.22	50
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B	0.01-2	<0.01	0.2
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-20	<0.05	0.05
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.02-50	0.22	3.0
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 CRA,B	0.05-5	<0.05	1.5
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-50	0.08	15.0
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05 - 10	<0.05	0.005
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05-10	<0.05	-
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.001-1	<0.001	-
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5.0	<0.1	-
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.01	0.1
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.002	0.01
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.02	-
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By


Technical Manager
(Vikas Kumar)

Authorized By


Quality Manager
(Dr. Abhishek Kumar Singh)



TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Steel Authority of India limited, Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha	Test Report No.	ECO/LAB/SW/0088/0383/08/2025
		Issue Date of Test Report	05.10.2025
Type of Sample	Surface Water		
Sample Registration No.	0088	Name of Location	Karo River Intake
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	12.09.2025	Time of Sample Collection	-
Date of Sample Receipt	15.09.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	15.09.2025	End Date of Analysis	30.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0383/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.38	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	32.0	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A,C	1 -1000	34.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	2.7	3.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B,D	0.05 -10	0.06	1.5
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A,C	5-100	6.0	50
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B	0.01-2	<0.01	0.2
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-20	<0.05	0.05
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.02-50	0.18	3.0
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 CRA,B	0.05-5	<0.05	1.5
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-50	<0.02	15.0
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05 - 10	<0.05	0.005
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05-10	<0.05	-
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.001-1	<0.001	-
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5.0	<0.1	-
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.01	0.1
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.002	0.01
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.02	-
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By


Technical Manager
(Vikas Kumar)

Authorized By


Quality Manager
(Dr. Abhishek Kumar Singh)



TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Steel Authority of India limited, Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha	Test Report No.	ECO/LAB/DW/0088/0375/08/2025
		Issue Date of Test Report	05.10.2025
Type of Sample	Drinking Water		
Sample Registration No.	0088	Name of Location	Mount Club Tap Water
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	12.09.2025	Time of Sample Collection	-
Date of Sample Receipt	15.09.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	15.09.2025	End Date of Analysis	30.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0375/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.02	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	<5	-	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	0.05 -10	0.14	1	1.5
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	5-100	<5	45	No Relax
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	0.01-2	<0.01	0.01	0.05
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 .C	0.05-20	<0.05	-	-
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03 2-F	0.02-50	0.10	0.3	No Relax
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-5	<0.05	0.05	1.5
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.02-50	0.06	5.0	15.0
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 Cra B	0.05 - 10	<0.001	0.001	0.002
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-10	<0.05	0.05	No Relax
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	0.001	No Relax
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.1-5.0	<0.1	0.1	0.3
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.002-2	<0.002	0.003	No Relax
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.02	0.02	No Relax
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	2 -1000	<2	-	-
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	1 -1000	<1	-	-
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	2.5-1000	<5	-	-
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.5-10	<0.5	0.2	No Relax
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.01-1	<0.01	0.01	No Relax
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note-

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below Detection Limit

----End of Report----

Verified By


 Technical Manager
 (Vikas Kumar)

Authorized By


 Quality Manager
 (Dr. Abhishek Kumar Singh)


TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Steel Authority of India limited, Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha	Test Report No.	ECO/LAB/DW/0088/0376/08/2025
		Issue Date of Test Report	05.10.2025
Type of Sample	Drinking Water		
Sample Registration No.	0088	Name of Location	Karo Guest House Tap Water
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	12.09.2025	Time of Sample Collection	-
Date of Sample Receipt	15.09.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	15.09.2025	End Date of Analysis	30.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0376/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	6.86	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	<5	-	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	0.05 -10	0.14	1	1.5
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	5-100	<5	45	No Relax
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	0.01-2	<0.01	0.01	0.05
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 .C	0.05-20	<0.05	-	-
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03 2-F	0.02-50	0.12	0.3	No Relax
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-5	<0.05	0.05	1.5
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.02-50	<0.02	5.0	15.0
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 Cra B	0.05 - 10	<0.001	0.001	0.002
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-10	<0.05	0.05	No Relax
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	0.001	No Relax
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.1-5.0	<0.1	0.1	0.3
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.002-2	<0.002	0.003	No Relax
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.02	0.02	No Relax
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	2 -1000	<2	-	-
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	1 -1000	<1	-	-
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	2.5-1000	<5	-	-
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.5-10	<0.5	0.2	No Relax
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.01-1	<0.01	0.01	No Relax
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.
- BDL- Below Detection Limit

----End of Report----

Verified By

Technical Manager
(Vikas Kumar)

Authorized By

Quality Manager
(Dr. Abhishek Kumar Singh)



TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Steel Authority of India limited, Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha	Test Report No.	ECO/LAB/WW/0088/0384/08/2025
Type of Sample	Waste Water	Issue Date of Test Report	05.10.2025
Sample Registration No.	0088	Name of Location	Oil Catch Pit Water Bottom Garbage
Sampling Method	APHA 24 th Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	12.09.2025	Time of Sample Collection	-
Date of Sample Receipt	15.09.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	15.09.2025	End Date of Analysis	30.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C Humidity: 53%	Sample Quantity	As per Requirement
		Sample ID Code	ECO/LAB/0385/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	GSR 422 (E) Desirable Limit
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	6.42	5.5-9.0
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	48.0	100.0
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	1 -1000	38.0	250.0
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	3.6	30.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	2.5-1000	<2.5	10.0
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A.C	0.05 -10	0.12	2.0
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B,A,C	5-100	5.86	-
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.01-2	0.12	-
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.05-20	<0.01	0.2
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.300 CRA	0.02-50	<0.05	2.0
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-5	<0.05	3.0
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-50	<0.02	5.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05 - 10	<0.05	1.0
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.05-10	<0.05	2.0
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.02	3.0
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5.0	<0.001	0.01
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.1	-
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.002	2.0
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	4.0	-
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23 rd Ed: 2017	0.02-10	<0.02	0.2

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By


 Technical Manager
 (Vikas Kumar)

Authorized By


 Quality Manager
 (Dr. Abhishek Kumar Singh)


TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Steel Authority of India limited, Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha	Test Report No.	ECO/LAB/WW/0088/0386/08/2025
		Issue Date of Test Report	05.10.2025
Type of Sample	Waste Water		
Sample Registration No.	0088	Name of Location	Oil Catch pit water G-Area
Sampling Method	APHA 24 th Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	12.09.2025	Time of Sample Collection	-
Date of Sample Receipt	15.09.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	15.09.2025	End Date of Analysis	30.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0386/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	GSR 422 (E)
						Desirable Limit
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	6.80	5.5-9.0
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	42.0	100.0
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	1 -1000	28.0	250.0
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	3.4	30.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	2.5-1000	<2.5	10.0
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A.C	0.05 -10	0.14	2.0
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B,A,C	5-100	7.04	-
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.01-2	0.24	-
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.05-20	<0.01	0.2
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.300 CRA	0.02-50	<0.05	2.0
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-5	<0.05	3.0
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-50	<0.02	5.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05 - 10	<0.05	1.0
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.05-10	<0.05	2.0
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.02	3.0
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5.0	<0.001	0.01
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.1	-
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.002	2.0
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	3.9	-
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23 rd Ed: 2017	0.02-10	<0.02	0.2

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By


 Technical Manager
 (Vikas Kumar)

Authorized By


 Quality Manager
 (Dr. Abhishek Kumar Singh)


Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/SWF/57

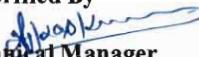
Test Report Issue date: 02.10.2025

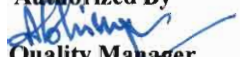
SURFACE FLOW RATE MONITORING REPORT FOR SEPTEMBER 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **Flow Meter**
3. Sampling Location : **Karo River Limtur Villg, Jhikaria Nallah , Panposh Nallah**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Location Name	Station Code	Result in (m/sec)
Karo River Limtur Village	SWFM1	0.58
Jhikaria nallah	SWFM2	0.41
Panposh Nallah	SWFM3	0.39

----End of Report----

Verified By

Technical Manager
(Vikas Kumar)

Authorized By

Quality Manager
(Dr. Abhishek Kumar Singh)





SAIL BOLANI ORES
MINES(RSP)

ENVIRONMENTAL
MONITORING

REPORT

OCTOBER 2025

Presented By

**Ecomen Mining
Pvt.Ltd**



1.0 PREAMBLE

Steel Authority of India Limited (*hereinafter termed as SAIL*), is a central public sector undertaking under the ownership of Ministry of Steel, Govt. of India has engaged M/s Ecomen Mining Pvt. Ltd., Lucknow, U.P. for carrying out various **Environmental Monitoring and Analysis Work** in its Bolani Ores Mines –RSP located in the district of Keonjhar.

M/s Ecomen Mining Pvt. Ltd. has obtained MoEF & CC Recognition, NABL Accreditation and SPCB, Odisha empanelment for its laboratory division and also a NABET Accredited consultant to carry out EIA/EMP Report for various sectors like Mining, Mineral Beneficiation, Coal Washery, Thermal Power Plant, Metallurgical Industry and Infrastructure & Building Projects etc.

Work Order issued by Bolani Ores Mines-RSP-SAIL vide No-CC/REV/67/2025-26 dated.07.07.2025 for Environmental Monitoring & Analysis Work includes monitoring & analysis of Air Environment, Water Environment, Land Environment such as Ambient Air Quality, Work Zone Air Quality, Water Quality, Waste Water Quality, Vehicular Emission and Soil Quality. This report presents the Environmental monitoring data collected from the core and buffer zone of Bolani Ores Mines in respect of following Environmental attributes during ‘October-2025’ in the given frequency. Further, in compliance of condition no 6 (vi) of the EC Grant order vide J/11015/418/2008-IA.II(M) dated. 21.12.2012 and condition no 7 A(iii) of EC Grant order vide J/11015/396/2008-IA.II(M) dated. 21.12.2012 the analysis of air quality monitoring data is done in this report with the objective to see the effectiveness of the mitigative measures already implemented.

Scope of the Work

The scope of work as per the work order for FY-2025-26 is as follows:

Table No. 1.1: Scope of Work

Sl. No.	Particulates	Frequency of monitoring	No. of Stations
1.	Sampling & Analyses for Ambient Air Quality(AAQ) for 5 Parameters i.e. PM 10, PM 2.5, SO ₂ ,NO _x & CO	Daily	04
2.	Sampling & Analyses for Ambient Air Quality (AAQ) for 2 Parameters i.e. PM 10, PM 2.5	Daily	02
3.	Sampling & Analyses of Fugitive dust/Emission (SPM & RSPM)	Daily	10
4.	Sampling & Analyses of Surface/ effluent/ drinking water Quality for 21 parameter	Monthly	08
5.	Sampling and Analyses of ground water quality for 21 parameters	Quarterly	03
6.	Sampling and Analyses of Soil Samples for specified 9 parameters	Yearly	06
7.	Monitoring of weather/meteorological Parameters and continuous generation of data daily round the year by	Daily	01

	establishing online station round the clock throughout the Year		
8.	Smoke Density Monitoring of Vehicular Exhaust	Annually	09
9.	Ground water level Monitoring	Quarterly	03
10.	Nallah/River Flow rate Monitoring	Monthly	03

2.0 DETAILS OF MONITORING/SAMPLING STATIONS:

To carry out the Environmental Data Generation program, ECOMEN in due consultation with SAIL has identified different locations to collect the samples for Air & Water Environment in and around the mining lease area. The details of stations identified are as follows. The details of locations identified for monitoring different environmental parameters are given in the subsequent sections.

2.1 Ambient Air Quality (A)

The prime objective of the ambient air quality study is to establish the existing ambient air quality in and around the mining lease area. The existing ambient air quality was monitored at six (6) locations. Out of six (06) locations, monitoring was carried out for Particulate Matter (PM₁₀), Particulate Matter (PM_{2.5}), Sulphur Dioxide (SO₂), Oxides of Nitrogen (NO_x) as (NO₂) and Carbon Monoxide (CO) at (4) Location and monitoring of Particulate Matter (PM₁₀) and Particulate Matter (PM_{2.5}) was carried out at the rest two (2) Locations as per the guidelines stipulated by Central Pollution Control Board. The locations are as given below.

Table No. 2.1: Details of AAQ Monitoring Stations

Sl. No.	Station Details	ML	Frequency	Station Code	GPS Coordinates	
					Latitude	Longitude
Ambient Air Quality (AAQ) for 5 Parameters i.e. PM ₁₀ , PM _{2.5} , SO ₂ ,NO _x & CO						
1	Bolani Village Community Center	6.90	Daily	A1	22°5'34.13"N	85°19'33.43"E
2	DAV Public School	6.90		A2	22°7'7.37"N	85°20'16.61"E
3	Main Gate	5.10		A3	22°6'18.18"N	85°19'47.27"E
4	Bolani Mines Office complex	5.10		A4	22°6'23.84"N	85°19'45.40"E
Ambient Air Quality (AAQ) for 2 Parameters i.e. PM ₁₀ , PM _{2.5}						
5	Limtur Village	6.90		A5	22°7'35.14"N	85°21'10.46"E
6	Karo Guest House	6.90		A6	22°05'36.38"N	85°20'32.38"E

2.2 Work Zone Air Quality/Fugitive Dust Emission Monitoring (F)

To assess the level of fugitive dust due to mining and allied activities, ten (10) monitoring stations were selected within the lease considering the activity area. Fugitive emissions monitoring was carried out on Daily Basis. The locations are as given below.

Table No. 2.2: Details of Fugitive Emission Monitoring Stations

Sl. No.	Station Details	ML	Frequency	Station Code	GPS Coordinates	
					Latitude	Longitude
1	Panposh	5.10	Daily	F1	22°6'41.46"N	85°19'41.60"E
2	D Area	5.10		F2	22°07'19.78"N	85°20'5.70"E
3	F Area	5.10		F3	22°05'45.19"N	85°18'21.95"E
4	G Area	5.10		F4	22°06'3.88"N	85°18'8.22"E
5	Lump Loading Point (near 600TPH)	6.90		F5	22°06'18.79"N	85°19'54.78"E
6	Fines Loading Plant	6.90		F6	22°05'51.12"N	85°19'45.79"E
7	Dump Fines handling route	6.90		F7	22°5'39.31"N	85°19'26.29"E
8	SSP	5.10		F8	22°06'13.80"N	85°19'12.52"E
9	Dump Fines Handling Site	5.10		F9	22°06'09.94"N	85°19'30.61"E
10	Mn Quarry	6.90		F10	22°07'23.56"N	85°21'8.86"E

2.3 Surface/Effluent/Drinking Water Quality:

In order to assess the quality of surface/effluent/drinking water, Eight (8) locations were identified in and around the ML area. Out of eight (8) locations, surface water was taken from four (4) locations, drinking water was taken from two (2) locations and effluent water was taken from two (2) locations. One grab sample was collected from each location in the month and was analyzed for 21 parameters as stipulated in the scope of work. The details of the locations are as follows:

Table No. 2.3: Details of Surface/Effluent/Drinking Water Quality Monitoring Stations

Station Details	Frequency	Station Code	GPS Coordinates	
			Latitude	Longitude
Surface Water Quality				
Panposh Nallah	Monthly Once	SWQ-1	22°6'31.68"N	85°19'34.41"E
Karo Near Lease Boundary		SWQ-2	22°7'26.27" N	85°21'52.95"E
Karo River Intake		SWQ-3	22°5.13.02' N	85°19'57.88"E

Jhikaria nallah before joining Karo		SWQ-4	22°5'22.50" N	85°19'10.05"E
Drinking Water Quality				
Mount Club Tap Water	Monthly Once	DW-1	22°6'56.24" N	85°19'58.21"E
Karo Guest House Tap Water		DW-2	22°5'36.68" N	85°20'32.09"E
Effluent Waste Water				
Oil Catch Pit Water Bottom Garage	Monthly Once	EW-1	22°6'27.11" N	85°19'37.62"E
Oil Catch pit water G-Area		EW-2	22°6'1.83"N	85°18'24.16"E

2.4 Ground Water Quality (GWQ)

In order to assess the quality of ground water, three (3) locations were identified in and around the mining lease area. One grab sample is collected from each location quarterly and analyzed for 21 parameters as stipulated in the scope of work. The details of the locations are as follows:

Table No. 2.4: Details of Ground Water Quality Monitoring Stations

Station Details	Frequency	Station Code	GPS Coordinates	
			Latitude	Longitude
Ground Water Quality				
Bolani Village-Well water	Quarterly	GWQ-1	22° 05′ 27.20″N	85° 19′ 27.13″E
Bolani Gouda Basti-Well water		GWQ-2	22° 05′ 40.97″N	85° 20′ 2.45″E
Balagoda Village-Well water		GWQ-3	22° 05′ 57.02″N	85° 20′ 27.41″E

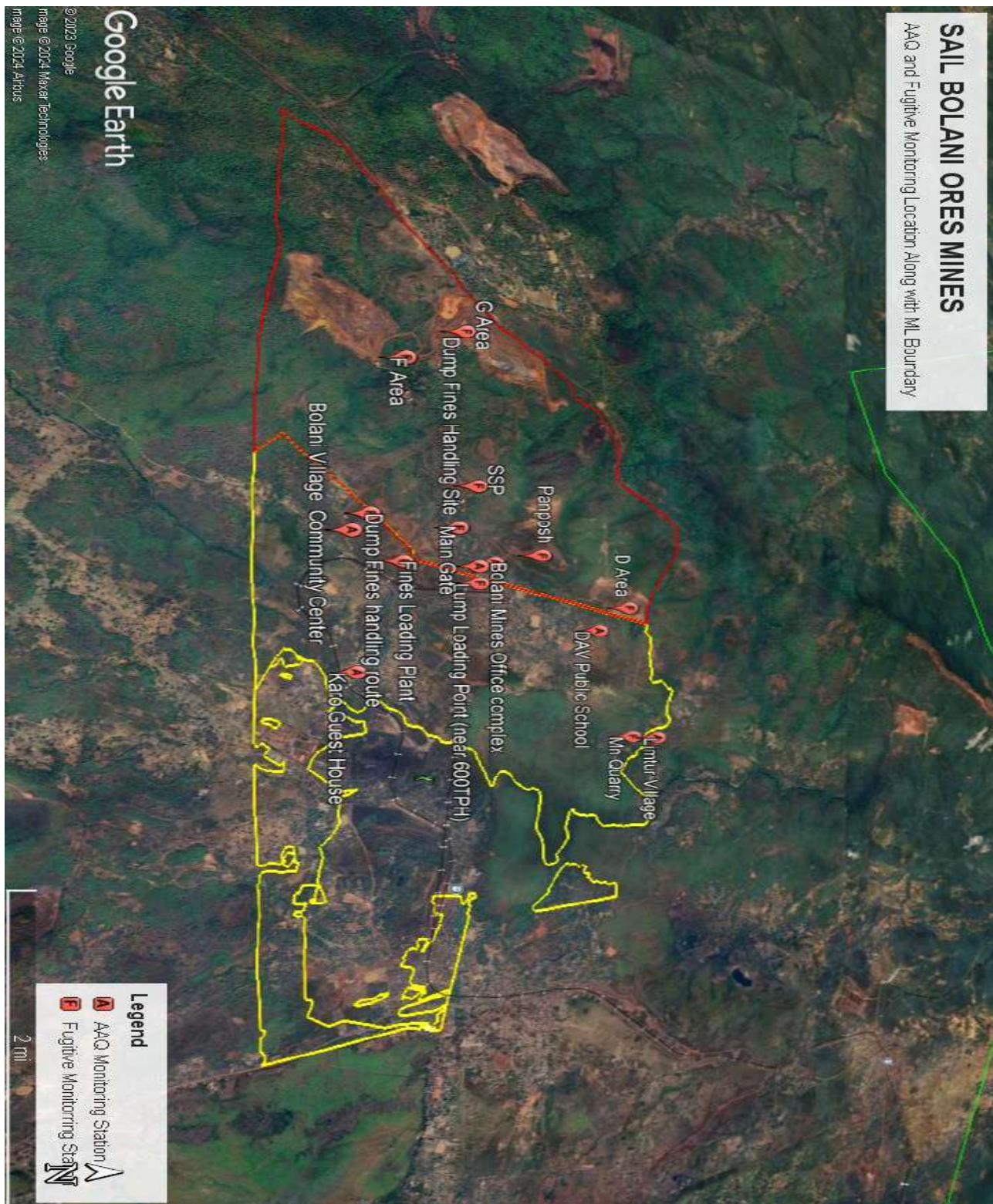
2.5 Weather/Meteorology

An Automatic Weather Monitoring Station (AWS) is installed at DAV Public School (22°7'7.85"N; 85°20'16.83"E) to collect the meteorological data on daily basis continuously. The parameters monitored at the meteorological station were Temperature, Relative Humidity, Wind Speed, Wind Direction and Rainfall. These parameters were recorded at weather monitoring station using the respective sensors.

Table No. 2.5: Details of Meteorological Monitoring Stations

Station Details	Frequency	Station Code	GPS Coordinates	
			Latitude	Longitude
DAV Public School	Daily Basis	M	22°7'7.85"N	85°20'16.83"E

Figure No.1: Location of Monitoring Station with ML Boundary



3.0 RESULTS AND DISCUSSION

3.1 Ambient Air Quality Monitoring

The Summarized results of AAQ for the month of October-2025 are given in the Table below

Table No. 3.1 (a): Summarized Results of Ambient Air Quality

Sl. No.	Location Name	Station Code	PM ₁₀			PM _{2.5}		
			Max.	Min.	Avg.	Max.	Min.	Avg.
1.	Bolani Village Community center	A1	72.4	65.3	68.45	22.3	18.1	20.17
2.	Dav Public School	A2	73	65	68.9	23	18.3	20.4
3.	Main Gate	A3	72.8	65.1	69.3	22.9	18.1	20.3
4.	Bolani Mines Office Complex	A4	72.8	65.1	69.4	22.9	18.2	20.6
5.	Limtur Village	A5	62.5	55.2	59.0	20.8	16.2	18.5
6.	Karo Guest House	A6	62.6	55.1	58.6	20.9	16.1	18.8
CPCB Std.			100 µg/m ³			60 µg/m ³		

Table No. 3.1(b): Summarized Results of Ambient Air Quality

Sl. No.	Location Name	Station Code	SO ₂			NO _x		
			Max.	Min.	Avg.	Max.	Min.	Avg.
1.	Bolani Village Community Center	A1	17.8	15.1	16.59	20	15.1	17.65
2.	Dav Public School	A2	18	15.1	16.5	19.9	15.3	17.7
3.	Main Gate	A3	18.0	15.1	16.6	19.9	15.1	17.4
4.	Bolani Mines Office Complex	A4	18.0	15	16.6	19.9	15.2	17.5
CPCB Std.			80 µg/m ³			80 µg/m ³		

BDL of SO₂ ≤ 4 µg/m³, BDL of NO_x ≤ 9 µg/m³ (No_x as NO₂)

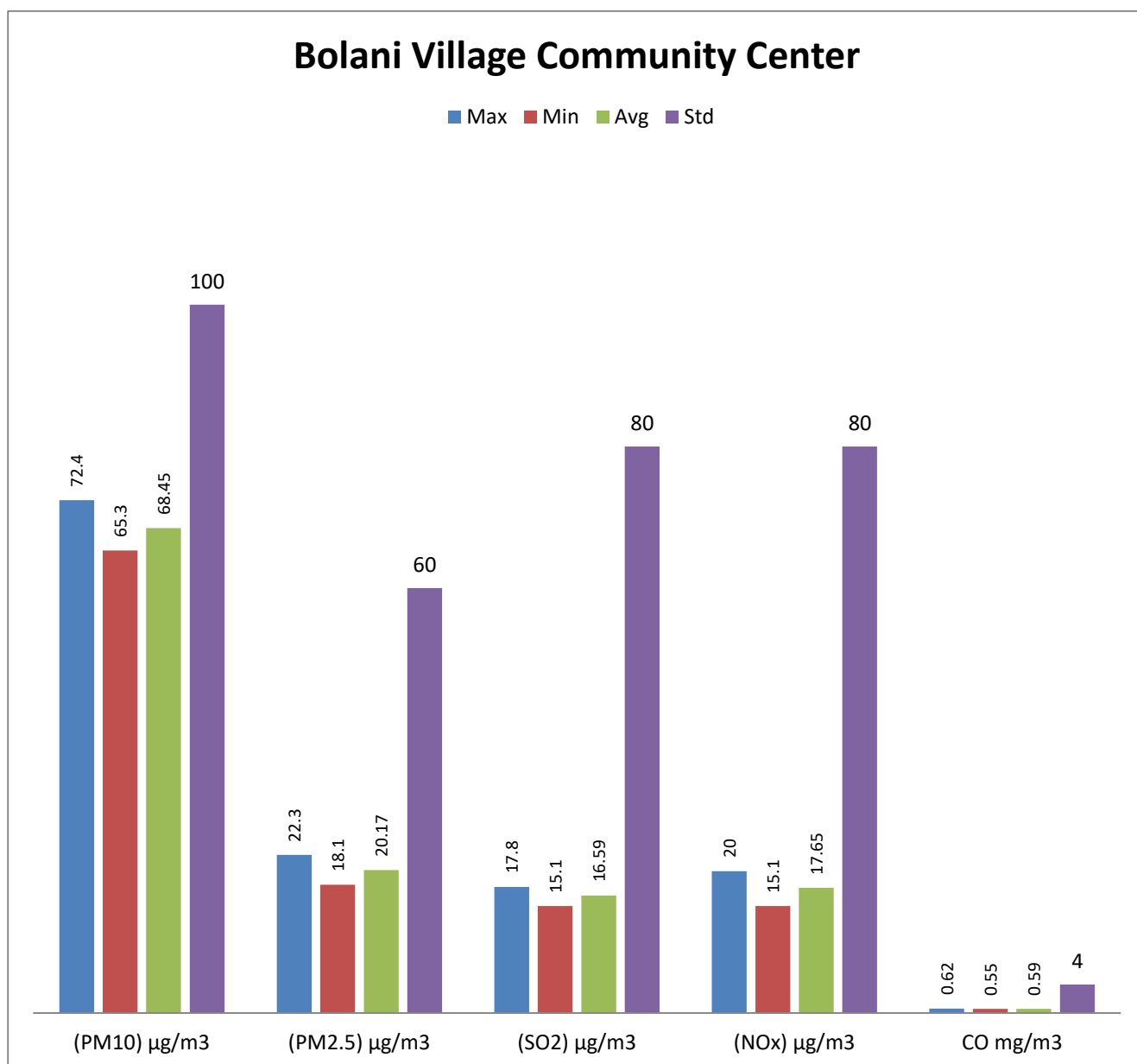
Table No. 3.1(c): Summarized Results of Ambient Air Quality

Sl. No.	Location Name	Station Code	CO		
			Max.	Min.	Avg.
1.	Bolani Village Community Center	A1	0.62	0.55	0.59
2.	Dav Public School	A2	0.63	0.55	0.59
3.	Main Gate	A3	0.63	0.55	0.59
4.	Bolani Mines Office Complex	A4	0.63	0.46	0.58
CPCB Std.			4 mg/m ³		

Note: BDL value for CO-0.11 mg/m³

3.1.1 Bolani village Community Center (A1):

The pollution level in Bolani village Community Center for the parameters PM₁₀, PM_{2.5}, SO₂, NO_x & CO is within the stipulated norms of CPCB. The maximum concentration of PM₁₀ was observed **72.4** µg/m³ whereas minimum concentration was observed **65.3** µg/m³ during the month. PM_{2.5} concentration ranges between **18.1** µg/m³ to **22.3** µg/m³, SO₂ concentration ranges between **15.1** µg/m³ to **17.8** µg/m³, NO_x as (NO₂) concentration ranges between **15.1** µg/m³ to **20** µg/m³ and CO concentration ranges between **0.55** mg/m³ to **0.62** mg/m³ was observed during the month



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/AAQ/176

Test Report Issue date: 02.11.2025

AMBIENT AIR QUALITY MONITORING REPORT FOR OCTOBER 2025

- Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha**
- Monitoring Instruments : **RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer (NDIR)**
- Sampling Location : **AAQMS-1: Bolani village Community Center**
- Sample collected by : **EMPL representative in presence of Client's representative.**

Parameters		Particulate Matter (PM ₁₀) µg/m ³	Particulate Matter (PM _{2.5}) µg/m ³	Sulphur Di-oxide (SO ₂) µg/m ³	Nitrogen Oxides (NO _x) µg/m ³	Carbon mono-oxides as CO mg/m ³
PROTOCOL		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
Limits of Detection		10-1000	10-1000	5-200	5-200	0.1-100
Limit as per National Ambient Air Quality Standards		100	60	80	80	4
S. No.	Sampling Date	Results				
1.	01.10.2025	71.9	19.4	15.1	20.0	0.59
2.	02.10.2025	70.5	19.4	17.8	19.9	0.61
3.	03.10.2025	66.9	19.2	17.2	18.5	0.58
4.	04.10.2025	66.0	21.1	15.1	17.4	0.56
5.	05.10.2025	72.4	22.3	16.4	18.9	0.58
6.	06.10.2025	70.8	22.3	17.1	19.1	0.62
7.	07.10.2025	66.0	18.5	17.6	18.8	0.61
8.	08.10.2025	67.6	22.3	15.8	18.7	0.60
9.	09.10.2025	66.7	18.4	15.9	16.4	0.60
10.	10.10.2025	69.2	21.5	15.7	16.0	0.58
11.	11.10.2025	68.8	18.1	17.6	17.8	0.61
12.	12.10.2025	65.3	21.9	16.8	16.7	0.57
13.	13.10.2025	71.3	22.1	16.9	16.0	0.58
14.	14.10.2025	67.1	19.8	16.1	16.3	0.59
15.	15.10.2025	69.4	20.1	16.7	19.2	0.56
16.	16.10.2025	68.8	18.4	16.0	17.8	0.57
17.	17.10.2025	70.3	20.1	16.7	18.3	0.57
18.	18.10.2025	68.5	19.5	16.8	16.2	0.61
19.	19.10.2025	69.0	18.1	16.8	16.8	0.56
20.	20.10.2025	67.9	18.1	17.7	15.7	0.55
21.	21.10.2025	67.6	20.5	16.0	19.1	0.58
22.	22.10.2025	70.2	20.6	17.0	16.7	0.59
23.	23.10.2025	67.1	22.0	17.7	18.8	0.61
24.	24.10.2025	66.4	19.9	16.0	16.4	0.59
25.	25.10.2025	69.5	21.0	17.6	17.8	0.59
26.	26.10.2025	66.8	20.5	15.3	15.1	0.57
27.	27.10.2025	71.1	18.3	16.3	16.8	0.60
28.	28.10.2025	66.9	22.3	16.8	17.1	0.59
29.	29.10.2025	67.6	18.7	17.0	17.3	0.59
30.	30.10.2025	65.7	20.2	17.2	19.6	0.60
31.	31.10.2025	68.7	20.6	15.5	18.0	0.55
Average		68.5	20.2	16.6	17.7	0.59

Note- No_x is Given as No₂

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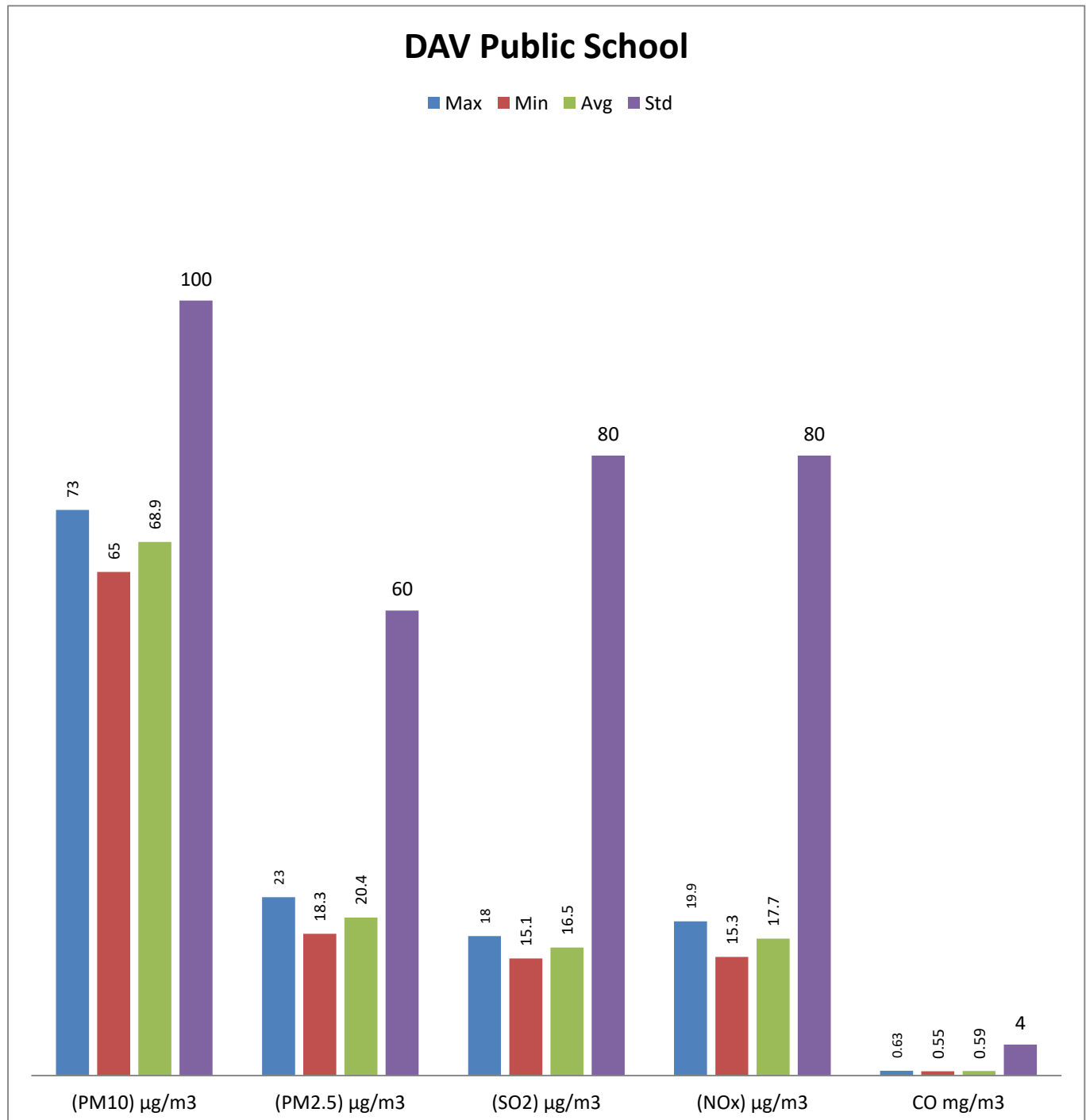

Technical Manager

Authorized By


Quality Manager
B-11, Second Floor,
Sector-11, Aligarh,
Dist. Aligarh

3.1.2 DAV Public School (A2):

The pollution level in DAV Public School for the parameters PM₁₀, PM_{2.5}, SO₂, NO_x & CO is within the stipulated norms of CPCB. The maximum concentration of PM₁₀ was observed 73 µg/m³ whereas minimum concentration was observed 65 µg/m³ during the month. PM_{2.5} concentration ranges between 18.3 µg/m³ to 23 µg/m³, SO₂ concentration ranges between 15.1 µg/m³ to 18 µg/m³, NO_x as (NO₂) concentration ranges between 15.3 µg/m³ to 19.9 µg/m³ and CO concentration ranges between 0.55 mg/m³ to 0.63 mg/m³ was observed during the month



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/AAQ/177

Test Report Issue date: 02.11.2025

AMBIENT AIR QUALITY MONITORING REPORT FOR OCTOBER 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer (NDIR)**
3. Sampling Location : **AAQMS-2: DAV Public School**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Parameters		Particulate Matter (PM ₁₀) µg/m ³	Particulate Matter (PM _{2.5}) µg/m ³	Sulphur Di-oxide (SO ₂) µg/m ³	Nitrogen Oxides (NO _x) µg/m ³	Carbon mono-oxides as CO mg/m ³
PROTOCOL		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
Limits of Detection		10-1000	10-1000	5-200	5-200	0.1-100
Limit as per National Ambient Air Quality Standards		100	60	80	80	4
S. No.	Sampling Date	Results				
1.	01.10.2025	72.1	22.3	17.4	15.7	0.60
2.	02.10.2025	65.4	19.1	17.3	17.9	0.62
3.	03.10.2025	73.0	21.4	16.3	16.7	0.62
4.	04.10.2025	68.3	18.5	16.4	15.3	0.55
5.	05.10.2025	66.4	21.2	17.4	16.3	0.61
6.	06.10.2025	70.0	18.5	16.5	16.8	0.58
7.	07.10.2025	70.3	23.0	15.1	16.5	0.62
8.	08.10.2025	65.3	19.5	17.9	17.7	0.57
9.	09.10.2025	65.3	20.5	16.4	19.8	0.61
10.	10.10.2025	73.0	22.2	16.7	17.1	0.61
11.	11.10.2025	72.7	20.3	17.0	18.8	0.58
12.	12.10.2025	66.6	20.4	16.1	17.9	0.57
13.	13.10.2025	70.9	21.3	16.9	17.2	0.60
14.	14.10.2025	65.0	21.6	17.1	18.6	0.63
15.	15.10.2025	66.7	19.8	16.9	16.0	0.61
16.	16.10.2025	71.9	22.1	18.0	19.9	0.62
17.	17.10.2025	67.9	19.5	16.9	19.8	0.59
18.	18.10.2025	66.0	20.7	16.8	18.6	0.57
19.	19.10.2025	69.8	18.3	15.6	19.8	0.56
20.	20.10.2025	72.5	18.3	15.5	19.4	0.61
21.	21.10.2025	65.9	18.5	15.1	18.8	0.56
22.	22.10.2025	68.1	20.8	17.2	18.9	0.62
23.	23.10.2025	69.6	20.2	15.7	16.2	0.62
24.	24.10.2025	72.6	20.9	15.5	17.1	0.61
25.	25.10.2025	72.4	19.7	17.6	16.0	0.62
26.	26.10.2025	67.7	21.7	16.0	15.9	0.55
27.	27.10.2025	65.5	20.4	16.2	19.3	0.57
28.	28.10.2025	66.1	20.7	15.3	18.5	0.57
29.	29.10.2025	69.1	21.7	16.4	17.6	0.57
30.	30.10.2025	69.6	18.9	16.6	15.9	0.62
31.	31.10.2025	66.8	20.5	16.4	17.5	0.59
Average		68.8	20.4	16.5	17.7	0.59

Note- No_x is Given as No₂

Verified By

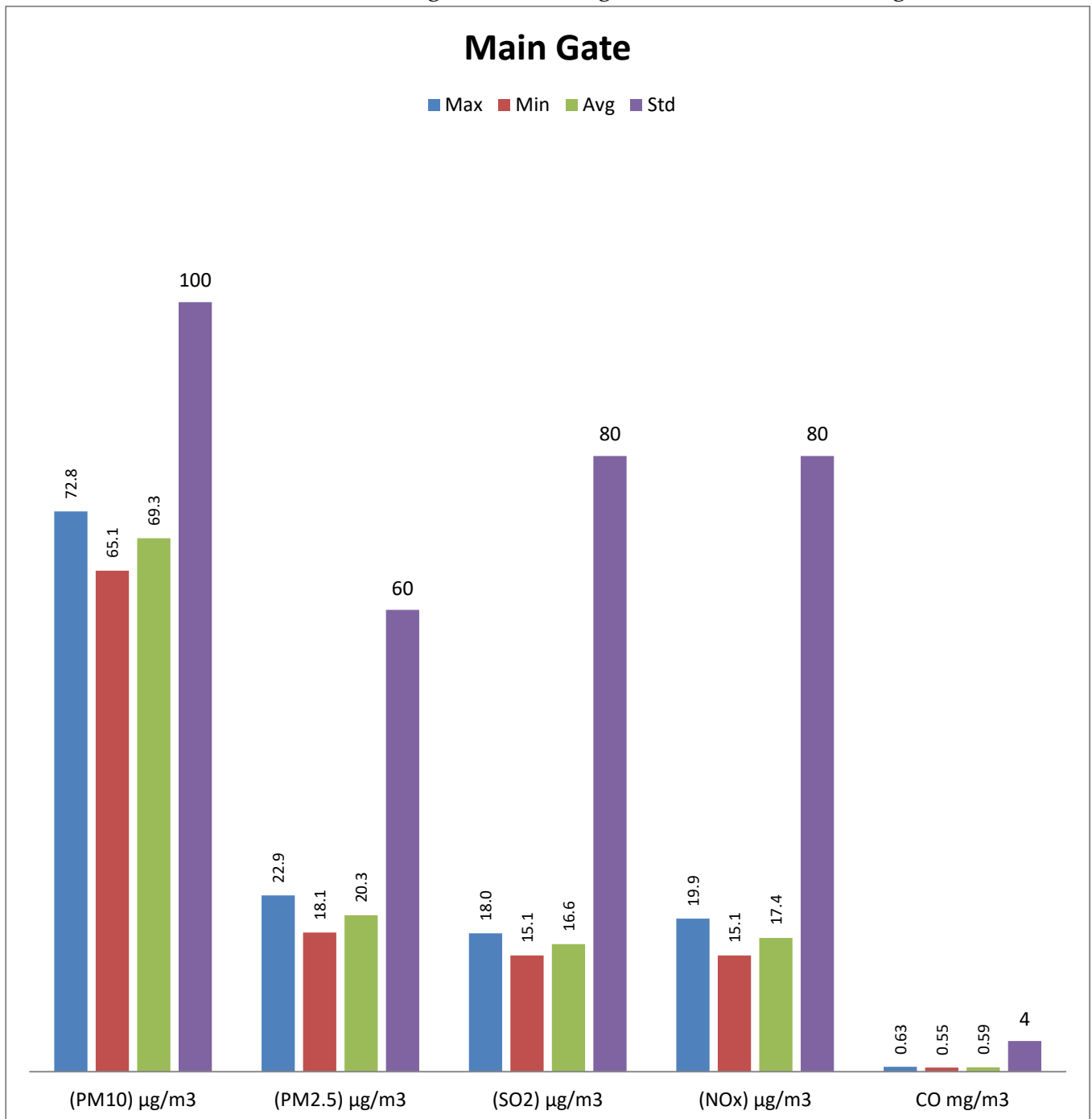

Technical Manager

Authorized By


Quality Manager


3.1.3 Main Gate (A3):

The pollution level in Main Gate for the parameters PM₁₀, PM_{2.5}, SO₂, NO_x & CO is within the stipulated norms of CPCB. The maximum concentration of PM₁₀ was observed 72.8 µg/m³ whereas minimum concentration was observed 65.1 µg/m³ during the month. PM_{2.5} concentration ranges between 18.1 µg/m³ to 22.9 µg/m³, SO₂ concentration ranges between 15.1 µg/m³ to 18.0 µg/m³, NO_x as (NO₂) concentration ranges between 15.1 µg/m³ to 19.9 µg/m³ and CO concentration ranges between 0.55 mg/m³ to 0.63 mg/m³ was observed during the month



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/AAQ/178

Test Report Issue date: 02.11.2025

AMBIENT AIR QUALITY MONITORING REPORT FOR OCTOBER 2025

1. Name of Industry : Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha
2. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer (NDIR)
3. Sampling Location : AAQMS-3: Main Gate
4. Sample collected by : EMPL representative in presence of Client's representative.

Parameters		Particulate Matter (PM ₁₀) µg/m ³	Particulate Matter (PM _{2.5}) µg/m ³	Sulphur Di-oxide (SO ₂) µg/m ³	Nitrogen Oxides (NO _x) µg/m ³	Carbon mono-oxides as CO mg/m ³
PROTOCOL		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
Limits of Detection		10-1000	10-1000	5-200	5-200	0.1-100
Limit as per National Ambient Air Quality Standards		100	60	80	80	4
S. No.	Sampling Date	Results				
1.	01.10.2025	66.9	20.9	15.4	17.8	0.55
2.	02.10.2025	72.0	21.9	16.6	18.0	0.61
3.	03.10.2025	70.1	22.9	17.2	15.8	0.58
4.	04.10.2025	70.1	19.3	17.5	17.9	0.60
5.	05.10.2025	67.6	20.6	17.3	19.5	0.61
6.	06.10.2025	70.9	20.4	15.8	15.9	0.56
7.	07.10.2025	68.2	20.1	15.5	15.7	0.58
8.	08.10.2025	71.1	22.3	16.5	18.8	0.62
9.	09.10.2025	67.9	18.5	17.0	15.1	0.59
10.	10.10.2025	71.3	21.2	15.6	16.4	0.62
11.	11.10.2025	70.3	21.6	15.4	15.6	0.56
12.	12.10.2025	72.8	18.3	17.9	16.0	0.62
13.	13.10.2025	71.0	20.3	18.0	16.2	0.60
14.	14.10.2025	72.1	18.4	17.8	17.9	0.62
15.	15.10.2025	68.4	20.7	15.3	19.4	0.57
16.	16.10.2025	66.9	18.5	16.1	17.3	0.56
17.	17.10.2025	69.8	21.9	17.0	16.8	0.61
18.	18.10.2025	72.7	19.0	15.4	18.9	0.60
19.	19.10.2025	68.4	20.7	17.5	16.1	0.56
20.	20.10.2025	65.9	19.7	17.6	19.4	0.60
21.	21.10.2025	69.2	21.3	17.1	19.0	0.61
22.	22.10.2025	66.4	19.4	15.1	18.0	0.56
23.	23.10.2025	69.7	18.5	16.2	16.4	0.59
24.	24.10.2025	68.7	18.8	16.6	18.1	0.63
25.	25.10.2025	67.2	20.7	15.4	15.9	0.59
26.	26.10.2025	65.1	22.7	16.5	16.1	0.63
27.	27.10.2025	72.8	22.5	17.4	17.3	0.59
28.	28.10.2025	65.9	20.1	15.7	17.1	0.59
29.	29.10.2025	68.4	18.1	17.5	19.9	0.61
30.	30.10.2025	71.7	20.0	17.4	19.7	0.59
31.	31.10.2025	69.9	20.6	16.4	17.5	0.57
Average		69.3	20.3	16.6	17.4	0.59

Note- No_x is Given as No₂

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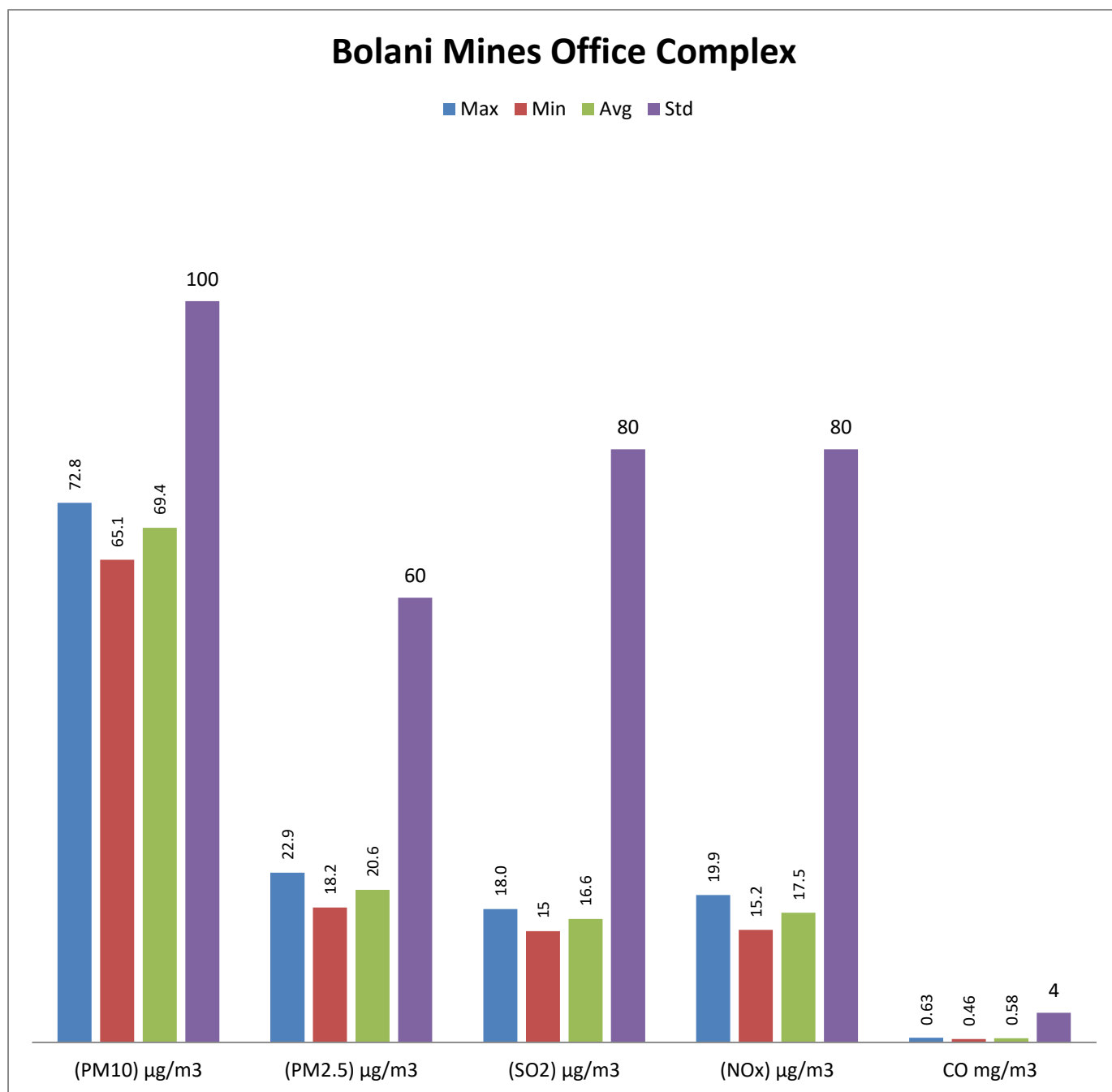

Technical Manager

Authorized By


Quality Manager


3.1.4 Bolani Mines Office Complex (A4):

The pollution level in Bolani Mines Office Complex for the parameters PM₁₀, PM_{2.5}, SO₂, NO_x & CO is within the stipulated norms of CPCB. The maximum concentration of PM₁₀ was observed **72.8** µg/m³ whereas minimum concentration was observed **65.1** µg/m³ during the month. PM_{2.5} concentration ranges between **18.2** µg/m³ to **22.9** µg/m³, SO₂ concentration ranges between **15.0** µg/m³ to **18.0** µg/m³, NO_x as (NO₂) concentration ranges between **15.2** µg/m³ to **19.9** µg/m³ and CO concentration ranges between **0.46** mg/m³ to **0.63** mg/m³ was observed during the month



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/AAQ/179

Test Report Issue date: 02.11.2025

AMBIENT AIR QUALITY MONITORING REPORT FOR OCTOBER 2025

1. Name of Industry : Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha
2. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer (NDIR)
3. Sampling Location : AAQMS-4: Bolani Mines Office Complex
4. Sample collected by : EMPL representative in presence of Client's representative.

Parameters		Particulate Matter (PM ₁₀) µg/m ³	Particulate Matter (PM _{2.5}) µg/m ³	Sulphur Di-oxide (SO ₂) µg/m ³	Nitrogen Oxides (NO _x) µg/m ³	Carbon mono-oxides as CO mg/m ³
PROTOCOL		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
Limits of Detection		10-1000	10-1000	5-200	5-200	0.1-100
Limit as per National Ambient Air Quality Standards		100	60	80	80	4
S. No.	Sampling Date	Results				
1.	01.10.2025	66.5	21.1	17.8	18.9	0.55
2.	02.10.2025	71.5	18.2	17.9	16.8	0.59
3.	03.10.2025	72.3	21.5	17.5	15.3	0.58
4.	04.10.2025	70.8	21.9	16.9	17.4	0.57
5.	05.10.2025	72.8	20.4	15.4	19.0	0.59
6.	06.10.2025	65.6	19.2	17.1	19.4	0.56
7.	07.10.2025	72.1	20.1	17.1	19.3	0.60
8.	08.10.2025	71.3	20.6	16.1	16.4	0.56
9.	09.10.2025	65.8	18.7	15.3	17.1	0.56
10.	10.10.2025	72.8	21.0	17.4	19.9	0.57
11.	11.10.2025	70.0	20.8	17.7	18.8	0.61
12.	12.10.2025	67.7	19.8	15.0	15.4	0.49
13.	13.10.2025	71.8	22.5	17.0	19.5	0.62
14.	14.10.2025	70.1	18.5	15.7	15.2	0.62
15.	15.10.2025	68.2	21.1	16.0	19.0	0.58
16.	16.10.2025	70.9	20.1	15.7	18.0	0.58
17.	17.10.2025	66.1	22.9	16.9	15.9	0.61
18.	18.10.2025	65.1	21.3	18.0	17.1	0.63
19.	19.10.2025	71.7	22.3	16.2	15.2	0.61
20.	20.10.2025	67.9	21.2	16.5	19.3	0.61
21.	21.10.2025	70.1	21.8	15.8	18.2	0.63
22.	22.10.2025	69.4	19.9	16.2	18.8	0.58
23.	23.10.2025	66.8	22.5	16.7	16.5	0.46
24.	24.10.2025	69.4	18.5	16.6	16.1	0.55
25.	25.10.2025	68.1	18.3	16.8	15.2	0.60
26.	26.10.2025	67.8	21.5	17.5	15.4	0.63
27.	27.10.2025	70.5	22.2	17.1	19.6	0.55
28.	28.10.2025	68.6	18.3	16.0	18.8	0.59
29.	29.10.2025	69.1	21.6	17.9	18.1	0.57
30.	30.10.2025	72.3	21.7	15.4	15.8	0.51
31.	31.10.2025	71.2	18.5	16.9	17.0	0.62
Average		69.5	20.6	16.6	17.5	0.58

Note- No_x is Given as No₂

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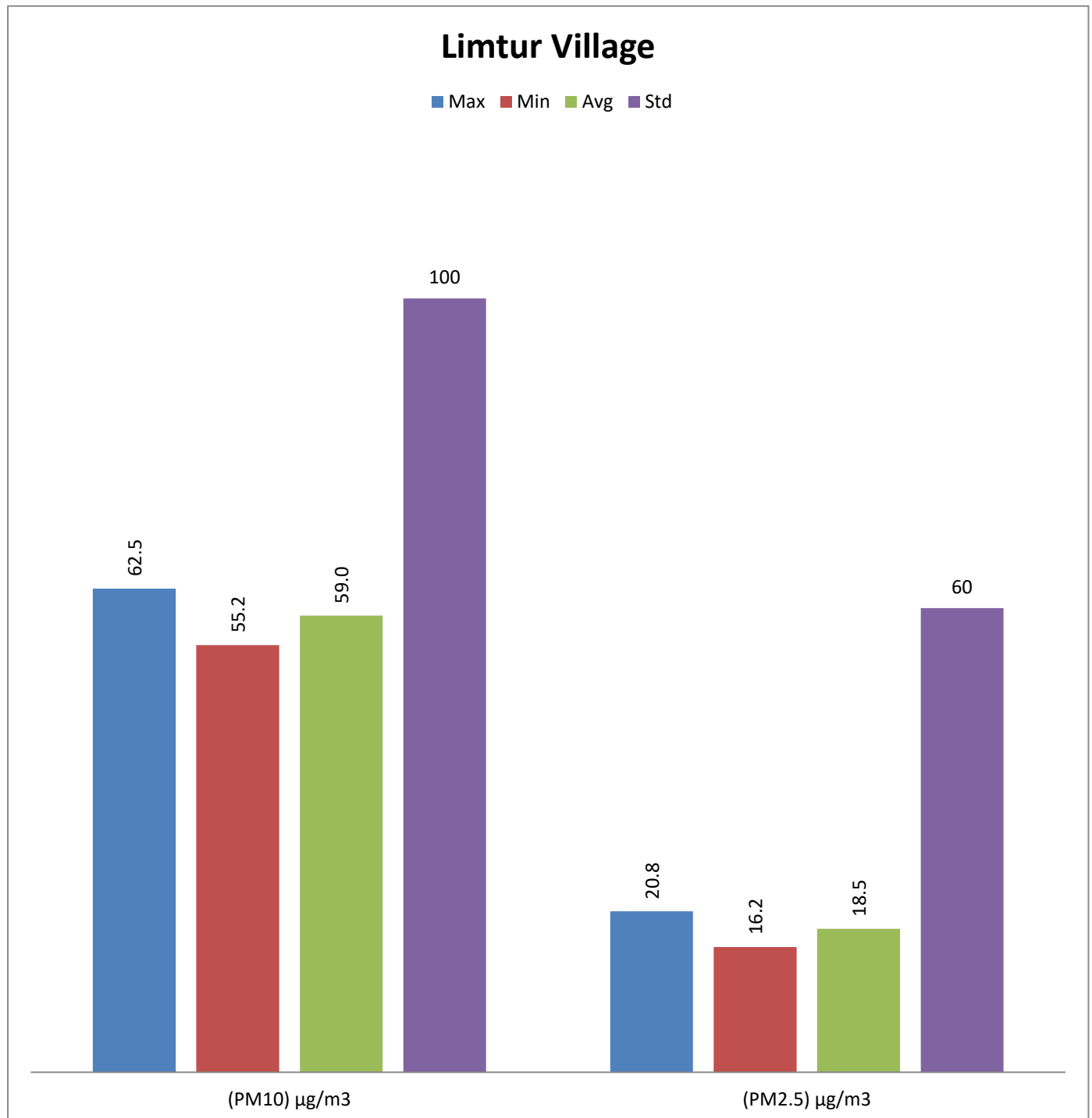

Technical Manager

Authorized By


Quality Manager


3.1.5 Limtur Village (A5):

The pollution level in Limtur Village for the parameters PM₁₀ and PM_{2.5} is within the stipulated norms of CPCB. The maximum concentration of PM₁₀ was observed **62.5** µg/m³ whereas minimum concentration was observed **55.2** µg/m³ and PM_{2.5} concentration ranges between **16.2** µg/m³ to **20.8** µg/m³ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/AAQ/180

Test Report Issue date: 02.11.2025

AMBIENT AIR QUALITY MONITORING REPORT FOR OCTOBER 2025

1. Name of Industry : Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha
2. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer (NDIR)
3. Sampling Location : AAQMS-5: Limtur Village
4. Sample collected by : EMPL representative in presence of Client's representative.

Parameters		Particulate Matter (PM ₁₀) µg/m ³	Particulate Matter (PM _{2.5}) µg/m ³
PROTOCOL		IS:5182(Part-23)	IS:5182(Part-24)
Limits of Detection		10-1000	10-1000
Limit as per National Ambient Air Quality Standards		100	60
S. No.	Sampling Date	Result	
1.	01.10.2025	59.5	17.4
2.	02.10.2025	56.1	20.8
3.	03.10.2025	59.9	17.3
4.	04.10.2025	58.2	18.4
5.	05.10.2025	59.4	20.1
6.	06.10.2025	55.2	16.2
7.	07.10.2025	55.8	20.1
8.	08.10.2025	61.3	16.5
9.	09.10.2025	62.5	19.9
10.	10.10.2025	58.2	20.4
11.	11.10.2025	61.4	18.1
12.	12.10.2025	60.4	20.6
13.	13.10.2025	59.6	19.7
14.	14.10.2025	61.3	18.8
15.	15.10.2025	56.8	17.4
16.	16.10.2025	59.0	16.7
17.	17.10.2025	56.3	17.7
18.	18.10.2025	58.1	16.4
19.	19.10.2025	60.7	19.6
20.	20.10.2025	56.4	19.4
21.	21.10.2025	61.3	20.1
22.	22.10.2025	60.9	18.1
23.	23.10.2025	55.6	17.5
24.	24.10.2025	57.2	17.9
25.	25.10.2025	62.3	19.9
26.	26.10.2025	60.5	20.2
27.	27.10.2025	57.3	18.6
28.	28.10.2025	62.4	16.5
29.	29.10.2025	58.0	20.6
30.	30.10.2025	58.4	16.8
31.	31.10.2025	56.1	17.3
Average		58.9	18.5

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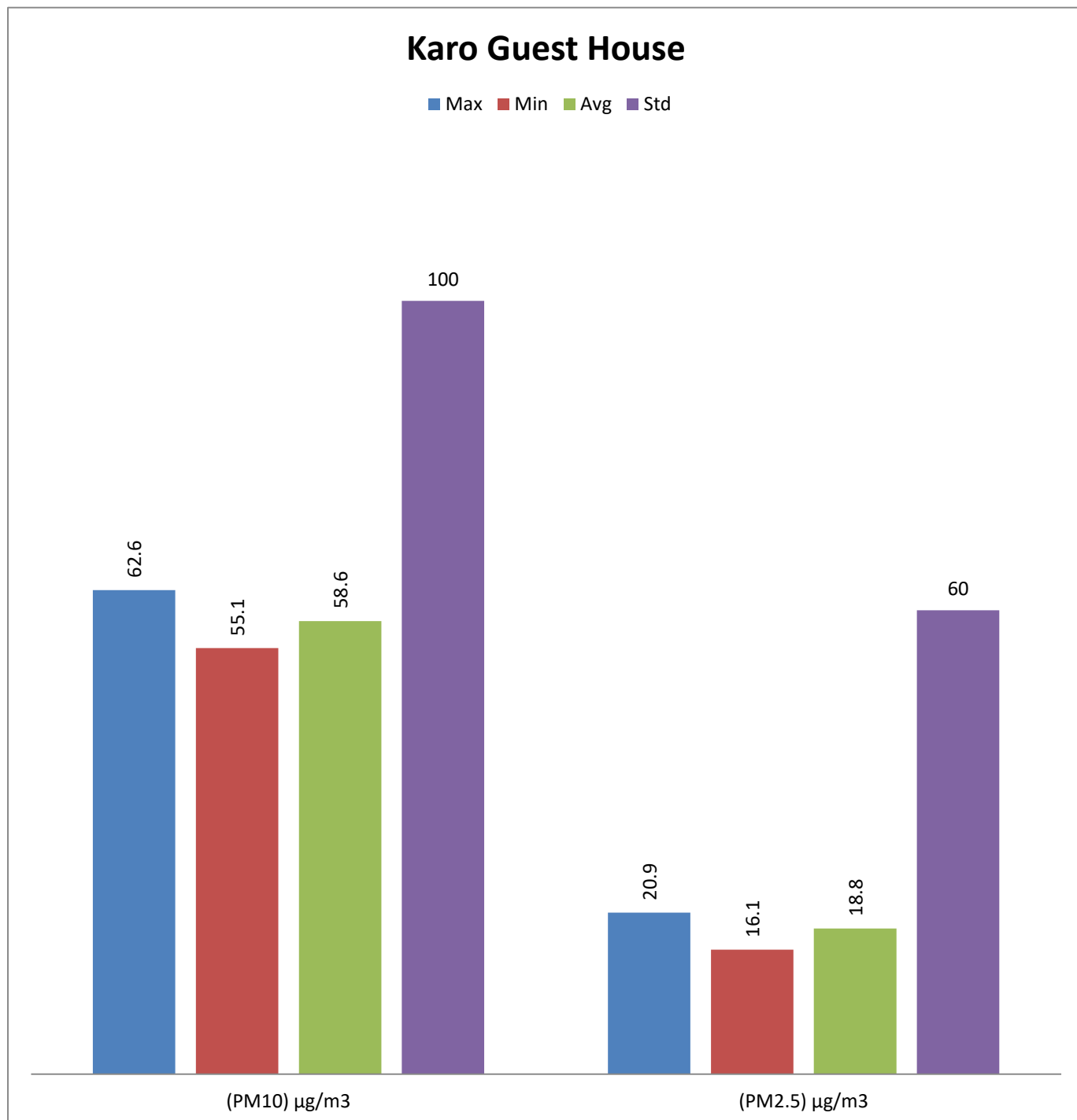

Technical Manager

Authorized By


Quality Manager
B.O. No. _____
Second Floor,
Sector-18, Aligarh,
Dist. Aligarh

3.1.6 Karo Guest House (A6):

The pollution level in Karo Guest House for the parameters PM_{10} and $PM_{2.5}$ is within the stipulated norms of CPCB. The maximum concentration of PM_{10} was observed $62.6 \mu\text{g}/\text{m}^3$ whereas minimum concentration was observed $55.1 \mu\text{g}/\text{m}^3$ and $PM_{2.5}$ concentration ranges between $16.1 \mu\text{g}/\text{m}^3$ to $20.9 \mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/AAQ/181

Test Report Issue date: 02.11.2025

AMBIENT AIR QUALITY MONITORING REPORT FOR OCTOBER 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer (NDIR)**
3. Sampling Location : **AAQMS-6: Karo Guest House**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Parameters		Particulate Matter (PM ₁₀) µg/m ³	Particulate Matter (PM _{2.5}) µg/m ³
PROTOCOL		IS:5182(Part-23)	IS:5182(Part-24)
Limits of Detection		10-1000	10-1000
Limit as per National Ambient Air Quality Standards		100	60
S. No.	Sampling Date	Result	
1.	01.10.2025	55.1	19.2
2.	02.10.2025	59.1	17.9
3.	03.10.2025	59.0	17.4
4.	04.10.2025	60.1	17.7
5.	05.10.2025	57.4	20.7
6.	06.10.2025	61.9	19.7
7.	07.10.2025	55.3	20.1
8.	08.10.2025	58.3	19.4
9.	09.10.2025	58.8	17.7
10.	10.10.2025	61.7	18.0
11.	11.10.2025	56.1	20.9
12.	12.10.2025	56.1	17.4
13.	13.10.2025	60.6	18.7
14.	14.10.2025	55.6	19.3
15.	15.10.2025	58.8	17.3
16.	16.10.2025	60.2	19.6
17.	17.10.2025	62.6	19.7
18.	18.10.2025	56.4	17.1
19.	19.10.2025	56.4	19.1
20.	20.10.2025	55.6	19.7
21.	21.10.2025	57.3	16.2
22.	22.10.2025	57.3	18.5
23.	23.10.2025	60.6	18.8
24.	24.10.2025	59.4	20.3
25.	25.10.2025	60.4	20.0
26.	26.10.2025	57.5	18.4
27.	27.10.2025	60.6	18.4
28.	28.10.2025	59.4	19.2
29.	29.10.2025	60.7	20.8
30.	30.10.2025	59.8	16.1
31.	31.10.2025	59.8	20.7
Average		58.6	18.8

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Technical Manager

Authorized By


Quality Manager


3.2 Work Zone Air Quality/Fugitive Dust Emission Monitoring:

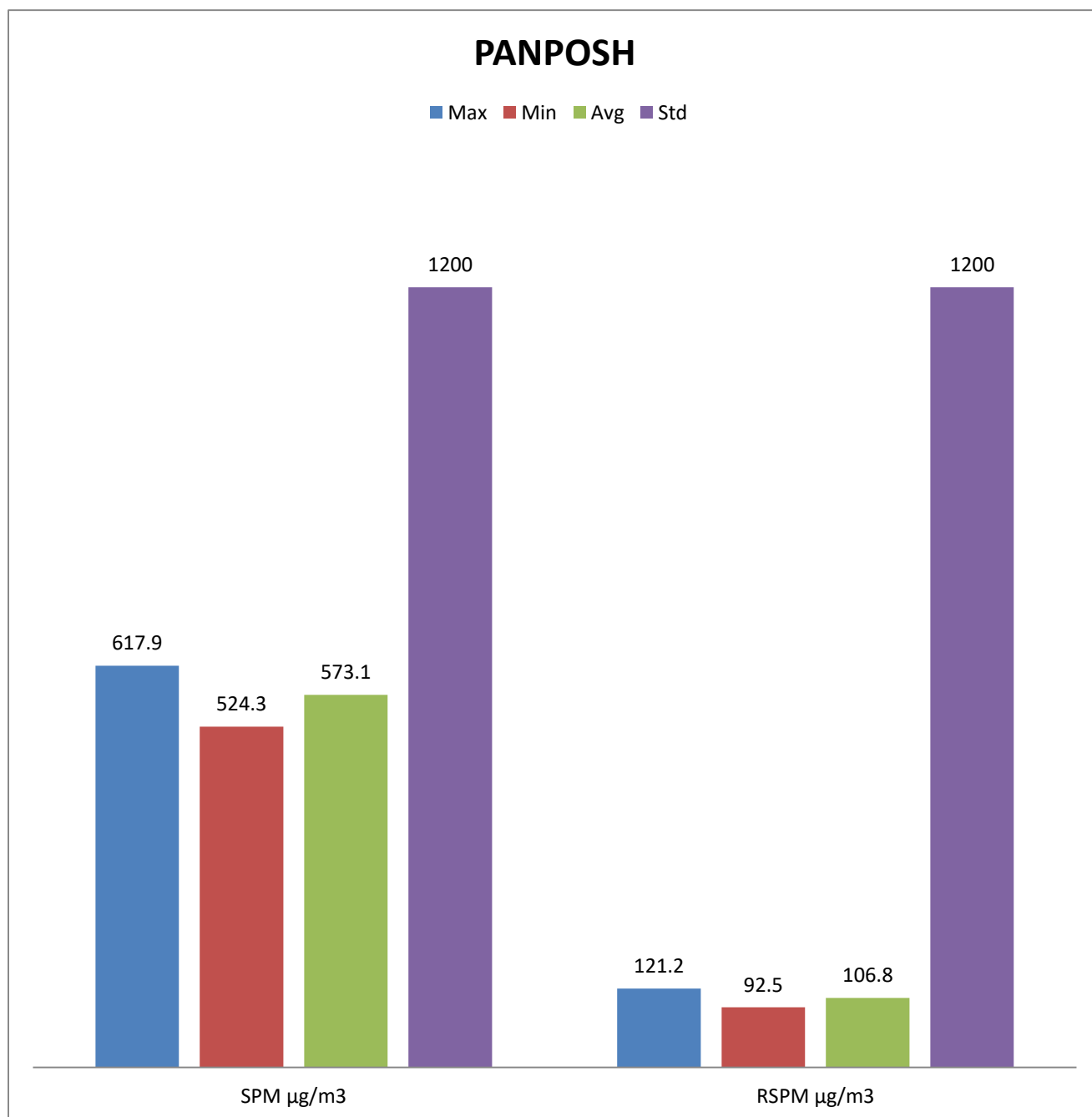
The Summarized results of Work Zone Air Quality/Fugitive Dust Emission for the month of October-2025 are given in the Table below

Table No. 3.2: Summarized Results of Work Zone Air Quality/Fugitive Dust Emission

Sl. No.	Location Name	Station Code	SPM $\mu\text{g}/\text{m}^3$			RSPM $\mu\text{g}/\text{m}^3$		
			Max.	Min.	Avg.	Max.	Min	Avg.
1.	Panposh	F1	617.9	524.3	573.1	121.2	92.5	106.8
2.	D Area	F2	614.8	525	562.9	119.6	92.3	105.4
3.	F Area	F3	618.5	524.2	570.2	122.1	93.7	104.9
4.	G Area	F4	615.7	525.9	574.9	117.4	90.3	106.3
5.	Lump Loading Point (near 600TPH)	F5	614.4	528.5	566.6	118.6	93.2	104.7
6.	Fines Loading (20 Area)	F6	617.2	525.2	568.4	120.6	91.7	106.1
7.	Dump Fines handling route	F7	618.8	528.8	572.0	123	91.7	105.2
8.	SSP	F8	612.5	524.9	570.8	122.1	91.6	104.5
9.	Dump Fines Handling Site	F9	614.8	524.5	567.9	119.8	91.1	106.8
10.	Mn Quarry	F10	615.7	517.9	566.1	119.4	91.4	104.9
As Per CTO Std.			1200 $\mu\text{g}/\text{m}^3$					

3.2.1 Panposh (F1):

The pollution level in Panposh Quarry for the parameters SPM_{and} RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **617.9** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **524.3** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **92.5** $\mu\text{g}/\text{m}^3$ to **121.2** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/182

Test Report Issue date: 02.11.2025

FUGITIVE EMISSION MONITORING REPORT FOR OCTOBER 2025

1. Name of Industry : Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha
2. Monitoring Instruments : RDS (APM 460 BL)
3. Sampling Location : Panposh
4. Sample collected by : EMPL representative in presence of Client's representative.

Sl. No.	Date	Sampling Location	Parameter	
			SPM µg/m ³	RSPM µg/m ³
1.	01-10-2025	Panposh	559.8	102.0
2.	02-10-2025	Panposh	602.5	114.9
3.	03-10-2025	Panposh	589.3	110.4
4.	04-10-2025	Panposh	581.3	103.9
5.	05-10-2025	Panposh	617.9	118.2
6.	06-10-2025	Panposh	586.4	114.8
7.	07-10-2025	Panposh	586.5	108.4
8.	08-10-2025	Panposh	593.9	116.7
9.	09-10-2025	Panposh	541.7	103.9
10.	10-10-2025	Panposh	535.1	92.5
11.	11-10-2025	Panposh	584.5	101.7
12.	12-10-2025	Panposh	615.9	121.2
13.	13-10-2025	Panposh	551.7	98.1
14.	14-10-2025	Panposh	551.0	99.8
15.	15-10-2025	Panposh	564.3	98.1
16.	16-10-2025	Panposh	556.4	108.1
17.	17-10-2025	Panposh	527.1	93.3
18.	18-10-2025	Panposh	608.2	118.3
19.	19-10-2025	Panposh	575.5	107.0
20.	20-10-2025	Panposh	541.9	100.0
21.	21-10-2025	Panposh	583.5	113.4
22.	22-10-2025	Panposh	577.9	102.9
23.	23-10-2025	Panposh	529.9	104.6
24.	24-10-2025	Panposh	613.6	113.2
25.	25-10-2025	Panposh	568.0	112.3
26.	26-10-2025	Panposh	598.5	116.2
27.	27-10-2025	Panposh	582.7	104.3
28.	28-10-2025	Panposh	567.2	101.0
29.	29-10-2025	Panposh	617.8	114.9
30.	30-10-2025	Panposh	531.7	99.8
31.	31-10-2025	Panposh	524.3	96.3
Average			573.1	106.8

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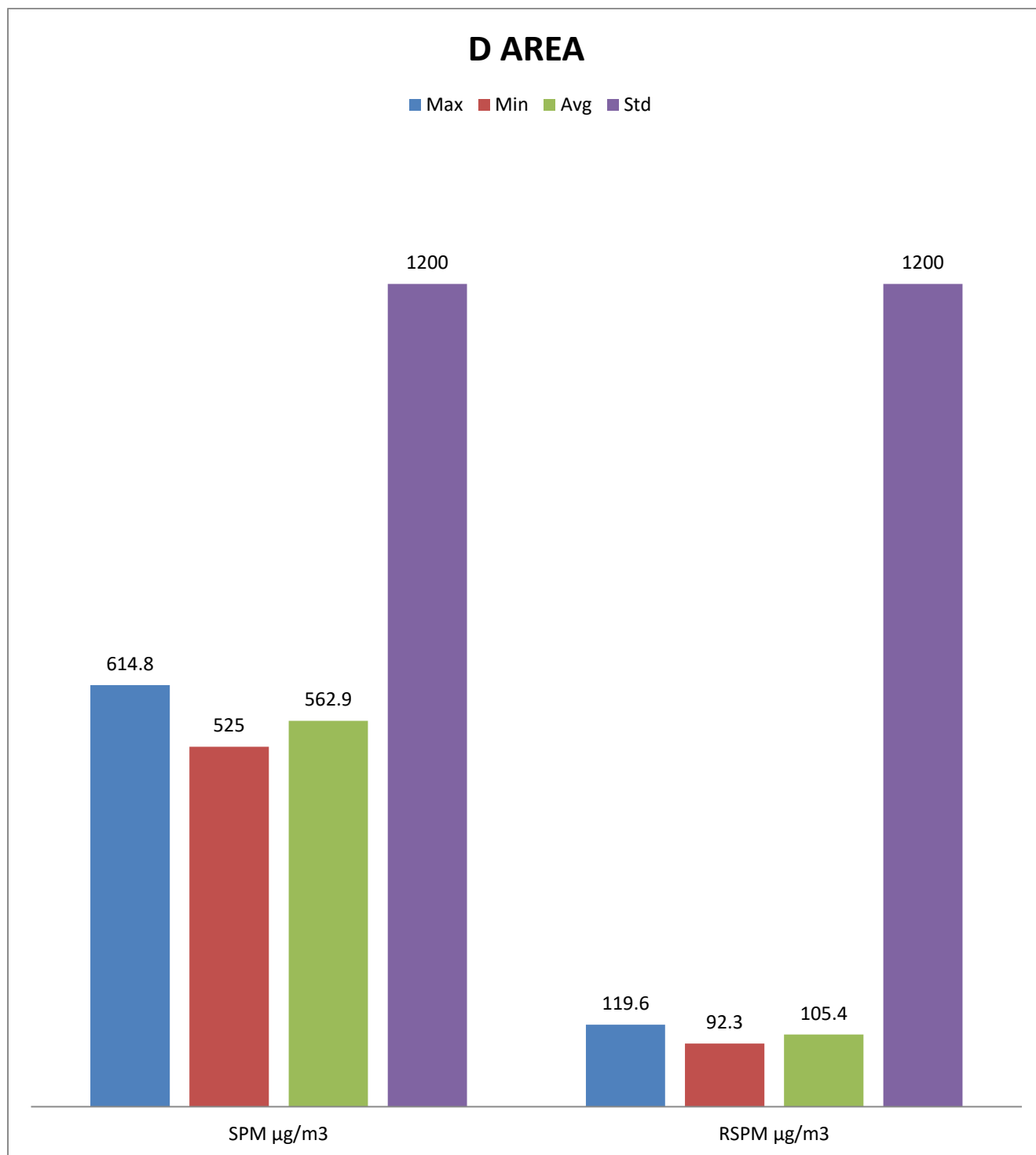

Technical Manager

Authorized By


Quality Manager


3.2.2 D Area(F2)

The pollution level in D Area Quarry for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **614.8** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **525.0** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **92.3** $\mu\text{g}/\text{m}^3$ to **119.6** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/183

Test Report Issue date: 02.11.2025

FUGITIVE EMISSION MONITORING REPORT FOR OCTOBER 2025

1. Name of Industry : Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha
2. Monitoring Instruments : RDS (APM 460 BL)
3. Sampling Location : D Area
4. Sample collected by : EMPL representative in presence of Client's representative.

Sl. No.	Date	Sampling Location	Parameter	
			SPM µg/m3	RSPM µg/m3
1.	01-10-2025	D Area	525.0	100.1
2.	02-10-2025	D Area	546.0	104.4
3.	03-10-2025	D Area	562.2	104.1
4.	04-10-2025	D Area	545.3	100.2
5.	05-10-2025	D Area	556.8	109.2
6.	06-10-2025	D Area	586.8	115.1
7.	07-10-2025	D Area	556.5	105.0
8.	08-10-2025	D Area	572.9	107.3
9.	09-10-2025	D Area	548.3	107.0
10.	10-10-2025	D Area	563.2	102.9
11.	11-10-2025	D Area	538.2	100.3
12.	12-10-2025	D Area	600.0	119.6
13.	13-10-2025	D Area	561.9	109.8
14.	14-10-2025	D Area	561.9	100.8
15.	15-10-2025	D Area	525.1	101.1
16.	16-10-2025	D Area	533.6	99.2
17.	17-10-2025	D Area	561.9	110.3
18.	18-10-2025	D Area	597.9	104.3
19.	19-10-2025	D Area	579.4	113.7
20.	20-10-2025	D Area	547.3	100.5
21.	21-10-2025	D Area	560.5	99.1
22.	22-10-2025	D Area	600.7	110.4
23.	23-10-2025	D Area	566.3	105.5
24.	24-10-2025	D Area	572.6	114.3
25.	25-10-2025	D Area	570.2	103.8
26.	26-10-2025	D Area	541.0	92.3
27.	27-10-2025	D Area	614.8	112.2
28.	28-10-2025	D Area	528.8	99.7
29.	29-10-2025	D Area	573.9	103.5
30.	30-10-2025	D Area	597.1	104.7
31.	31-10-2025	D Area	555.2	107.6
Average			562.9	105.4

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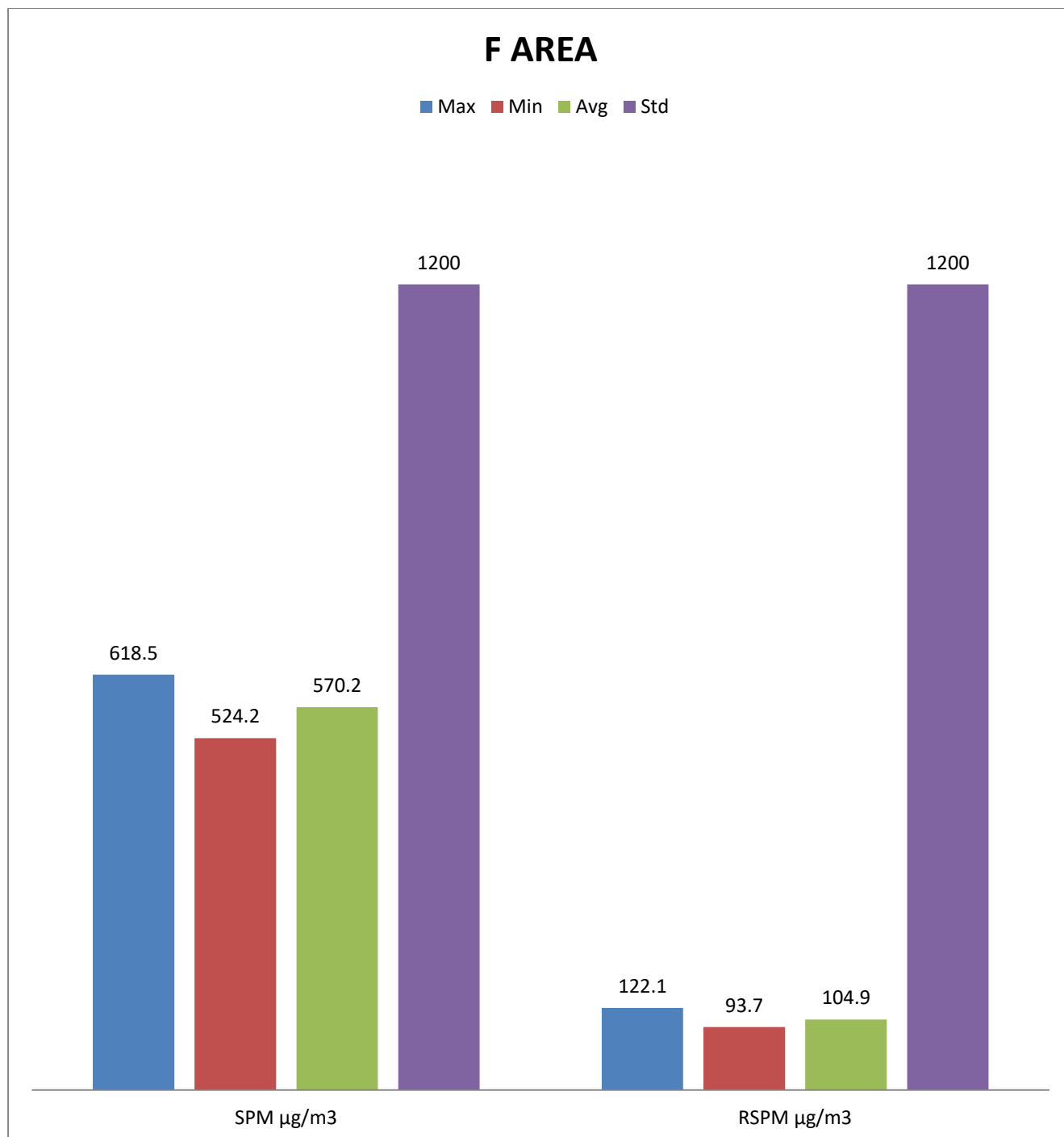

Technical Manager

Authorized By


Quality Manager


3.2.3 F Area(F3)

The pollution level in F Area Quarry for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **618.5** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **524.2** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **93.7** $\mu\text{g}/\text{m}^3$ to **122.1** $\mu\text{g}/\text{m}^3$ during the month



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/184

Test Report Issue date: 02.11.2025

FUGITIVE EMISSION MONITORING REPORT FOR OCTOBER 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **F Area**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM µg/m3	RSPM µg/m3
1.	01-10-2025	F Area	556.8	96.8
2.	02-10-2025	F Area	580.3	109.5
3.	03-10-2025	F Area	557.8	108.4
4.	04-10-2025	F Area	548.8	101.7
5.	05-10-2025	F Area	586.2	109.6
6.	06-10-2025	F Area	574.3	99.9
7.	07-10-2025	F Area	570.8	101.4
8.	08-10-2025	F Area	615.6	122.0
9.	09-10-2025	F Area	589.0	107.2
10.	10-10-2025	F Area	524.2	103.6
11.	11-10-2025	F Area	601.4	103.7
12.	12-10-2025	F Area	558.3	104.7
13.	13-10-2025	F Area	577.0	100.4
14.	14-10-2025	F Area	580.9	107.6
15.	15-10-2025	F Area	562.5	104.3
16.	16-10-2025	F Area	610.3	113.3
17.	17-10-2025	F Area	552.9	97.8
18.	18-10-2025	F Area	532.8	102.2
19.	19-10-2025	F Area	564.7	98.2
20.	20-10-2025	F Area	560.9	97.8
21.	21-10-2025	F Area	570.6	104.7
22.	22-10-2025	F Area	559.0	103.5
23.	23-10-2025	F Area	549.5	103.0
24.	24-10-2025	F Area	600.3	111.0
25.	25-10-2025	F Area	618.5	122.1
26.	26-10-2025	F Area	576.4	99.4
27.	27-10-2025	F Area	595.7	119.1
28.	28-10-2025	F Area	590.9	106.5
29.	29-10-2025	F Area	535.4	98.9
30.	30-10-2025	F Area	546.1	93.7
31.	31-10-2025	F Area	529.6	101.4
Average			570.2	104.9

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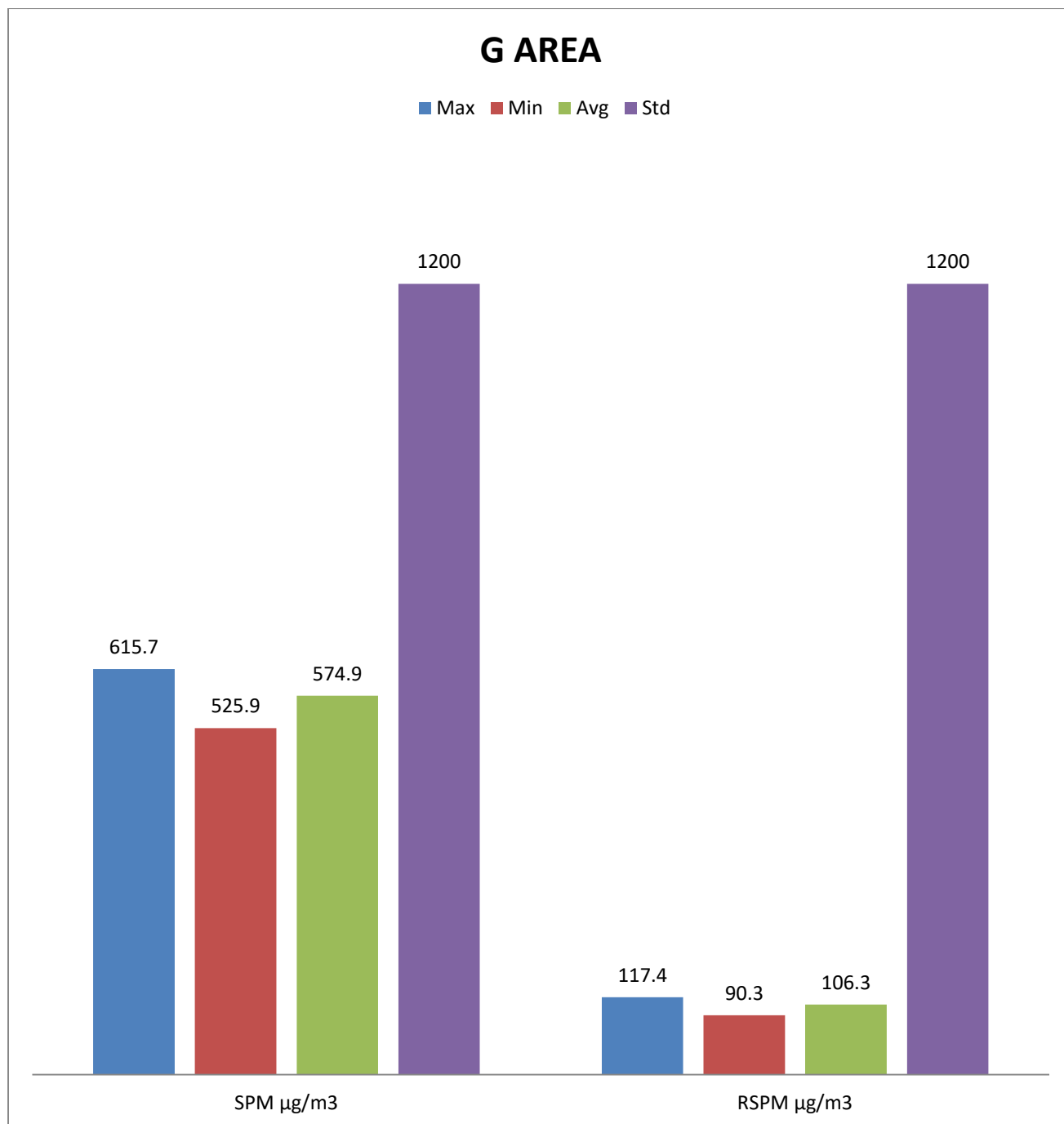

Technical Manager

Authorized By


Quality Manager


3.2.4 G Area(F4)

The pollution level in G Area Quarry for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **615.7** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **525.9** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **90.3** $\mu\text{g}/\text{m}^3$ to **117.4** $\mu\text{g}/\text{m}^3$ during the month



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/185

Test Report Issue date: 02.11.2025

FUGITIVE EMISSION MONITORING REPORT FOR OCTOBER 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **G Area**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM µg/m ³	RSPM µg/m ³
1.	01-10-2025	G Area	603.7	113.9
2.	02-10-2025	G Area	581.0	100.9
3.	03-10-2025	G Area	577.1	113.8
4.	04-10-2025	G Area	606.8	110.0
5.	05-10-2025	G Area	615.7	106.6
6.	06-10-2025	G Area	558.3	109.7
7.	07-10-2025	G Area	549.5	99.4
8.	08-10-2025	G Area	549.3	100.0
9.	09-10-2025	G Area	583.5	115.6
10.	10-10-2025	G Area	573.2	109.6
11.	11-10-2025	G Area	582.3	114.4
12.	12-10-2025	G Area	569.8	98.0
13.	13-10-2025	G Area	601.6	112.8
14.	14-10-2025	G Area	614.3	114.0
15.	15-10-2025	G Area	579.9	101.5
16.	16-10-2025	G Area	582.7	108.6
17.	17-10-2025	G Area	525.9	96.9
18.	18-10-2025	G Area	588.0	107.7
19.	19-10-2025	G Area	547.5	97.2
20.	20-10-2025	G Area	530.7	90.3
21.	21-10-2025	G Area	593.2	109.3
22.	22-10-2025	G Area	571.8	107.1
23.	23-10-2025	G Area	570.0	108.8
24.	24-10-2025	G Area	582.4	104.7
25.	25-10-2025	G Area	556.4	96.7
26.	26-10-2025	G Area	570.1	112.2
27.	27-10-2025	G Area	606.7	117.4
28.	28-10-2025	G Area	609.4	112.0
29.	29-10-2025	G Area	526.1	99.2
30.	30-10-2025	G Area	580.8	110.6
31.	31-10-2025	G Area	534.7	95.6
Average			574.9	106.3

Verified By

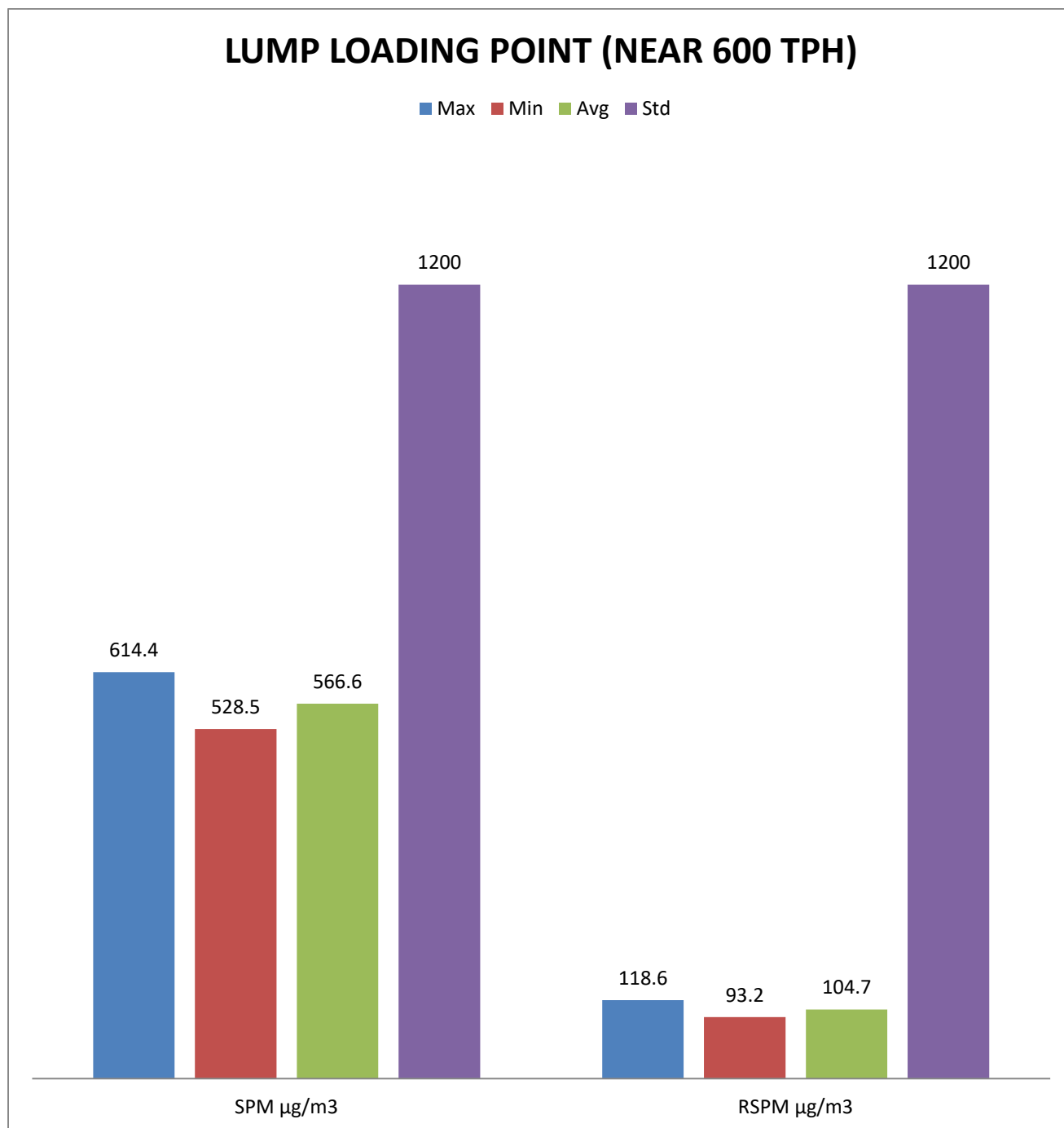

Technical Manager

Authorized By


Quality Manager


3.2.5 Lump Loading Point (Near 600 TPH) (F5)

The pollution level in Lump Loading Point (Near 600 TPH) for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **614.4** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **528.5** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **93.2** $\mu\text{g}/\text{m}^3$ to **118.6** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/186

Test Report Issue date: 02.11.2025

FUGITIVE EMISSION MONITORING REPORT FOR OCTOBER 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **Lump Loading Point (Near 600 TPH)**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM µg/m3	RSPM µg/m3
1.	01-10-2025	Lump Loading Point (Near 600 TPH)	529.8	98.6
2.	02-10-2025	Lump Loading Point (Near 600 TPH)	573.6	109.4
3.	03-10-2025	Lump Loading Point (Near 600 TPH)	601.9	111.7
4.	04-10-2025	Lump Loading Point (Near 600 TPH)	569.1	99.1
5.	05-10-2025	Lump Loading Point (Near 600 TPH)	535.0	103.2
6.	06-10-2025	Lump Loading Point (Near 600 TPH)	562.1	110.5
7.	07-10-2025	Lump Loading Point (Near 600 TPH)	595.9	113.6
8.	08-10-2025	Lump Loading Point (Near 600 TPH)	546.5	95.6
9.	09-10-2025	Lump Loading Point (Near 600 TPH)	583.2	100.1
10.	10-10-2025	Lump Loading Point (Near 600 TPH)	578.2	114.5
11.	11-10-2025	Lump Loading Point (Near 600 TPH)	528.5	96.3
12.	12-10-2025	Lump Loading Point (Near 600 TPH)	608.9	104.5
13.	13-10-2025	Lump Loading Point (Near 600 TPH)	535.0	103.5
14.	14-10-2025	Lump Loading Point (Near 600 TPH)	611.6	109.5
15.	15-10-2025	Lump Loading Point (Near 600 TPH)	539.0	93.2
16.	16-10-2025	Lump Loading Point (Near 600 TPH)	597.0	105.4
17.	17-10-2025	Lump Loading Point (Near 600 TPH)	555.2	107.8
18.	18-10-2025	Lump Loading Point (Near 600 TPH)	584.6	100.9
19.	19-10-2025	Lump Loading Point (Near 600 TPH)	580.7	108.3
20.	20-10-2025	Lump Loading Point (Near 600 TPH)	571.8	105.7
21.	21-10-2025	Lump Loading Point (Near 600 TPH)	547.5	95.8
22.	22-10-2025	Lump Loading Point (Near 600 TPH)	563.8	111.1
23.	23-10-2025	Lump Loading Point (Near 600 TPH)	555.9	108.3
24.	24-10-2025	Lump Loading Point (Near 600 TPH)	553.4	108.2
25.	25-10-2025	Lump Loading Point (Near 600 TPH)	543.8	94.6
26.	26-10-2025	Lump Loading Point (Near 600 TPH)	563.1	107.5
27.	27-10-2025	Lump Loading Point (Near 600 TPH)	534.0	97.4
28.	28-10-2025	Lump Loading Point (Near 600 TPH)	534.4	98.5
29.	29-10-2025	Lump Loading Point (Near 600 TPH)	614.4	118.6
30.	30-10-2025	Lump Loading Point (Near 600 TPH)	584.9	112.1
31.	31-10-2025	Lump Loading Point (Near 600 TPH)	582.1	101.4
Average			566.6	104.7

Verified By

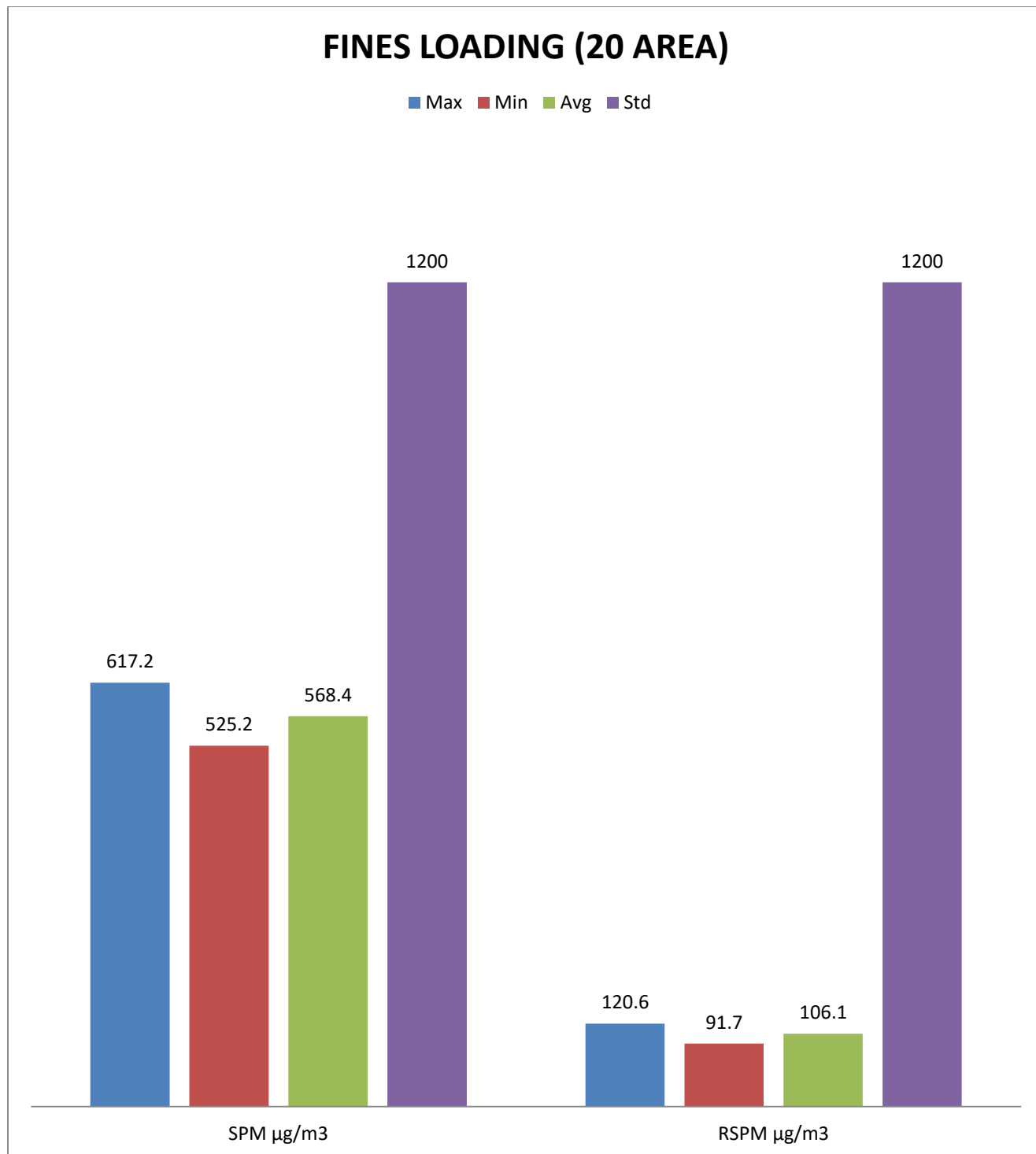

Technical Manager

Authorized By


Quality Manager

3.2.6 Fines Loading (20 area) (F6)

The pollution level in Fines Loading (20 area) for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **617.2 $\mu\text{g}/\text{m}^3$** whereas minimum concentration was observed **525.2 $\mu\text{g}/\text{m}^3$** and RSPM concentration ranges between **91.7 $\mu\text{g}/\text{m}^3$** to **120.6 $\mu\text{g}/\text{m}^3$** during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/187

Test Report Issue date: 02.11.2025

FUGITIVE EMISSION MONITORING REPORT FOR OCTOBER 2025

1. Name of Industry : Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha
2. Monitoring Instruments : RDS (APM 460 BL)
3. Sampling Location : Fines Loading (20 area)
4. Sample collected by : EMPL representative in presence of Client's representative.

Sl. No.	Date	Sampling Location	Parameter	
			SPM µg/m ³	RSPM µg/m ³
1.	01-10-2025	Fines Loading (20 area)	616.9	120.6
2.	02-10-2025	Fines Loading (20 area)	576.0	112.7
3.	03-10-2025	Fines Loading (20 area)	536.4	97.1
4.	04-10-2025	Fines Loading (20 area)	560.1	102.8
5.	05-10-2025	Fines Loading (20 area)	554.7	104.2
6.	06-10-2025	Fines Loading (20 area)	526.5	91.7
7.	07-10-2025	Fines Loading (20 area)	530.7	99.1
8.	08-10-2025	Fines Loading (20 area)	552.8	109.7
9.	09-10-2025	Fines Loading (20 area)	585.8	101.7
10.	10-10-2025	Fines Loading (20 area)	525.2	100.0
11.	11-10-2025	Fines Loading (20 area)	581.0	110.3
12.	12-10-2025	Fines Loading (20 area)	546.3	94.1
13.	13-10-2025	Fines Loading (20 area)	573.6	104.0
14.	14-10-2025	Fines Loading (20 area)	532.7	104.6
15.	15-10-2025	Fines Loading (20 area)	553.4	98.5
16.	16-10-2025	Fines Loading (20 area)	588.0	109.5
17.	17-10-2025	Fines Loading (20 area)	609.0	108.4
18.	18-10-2025	Fines Loading (20 area)	595.8	108.6
19.	19-10-2025	Fines Loading (20 area)	579.9	115.0
20.	20-10-2025	Fines Loading (20 area)	581.1	108.6
21.	21-10-2025	Fines Loading (20 area)	602.1	117.8
22.	22-10-2025	Fines Loading (20 area)	572.3	101.1
23.	23-10-2025	Fines Loading (20 area)	617.2	119.2
24.	24-10-2025	Fines Loading (20 area)	549.3	108.4
25.	25-10-2025	Fines Loading (20 area)	587.9	103.2
26.	26-10-2025	Fines Loading (20 area)	602.7	119.4
27.	27-10-2025	Fines Loading (20 area)	537.4	106.5
28.	28-10-2025	Fines Loading (20 area)	525.4	92.1
29.	29-10-2025	Fines Loading (20 area)	608.4	114.0
30.	30-10-2025	Fines Loading (20 area)	577.4	99.3
31.	31-10-2025	Fines Loading (20 area)	533.8	106.7
Average			568.4	106.1

Verified By

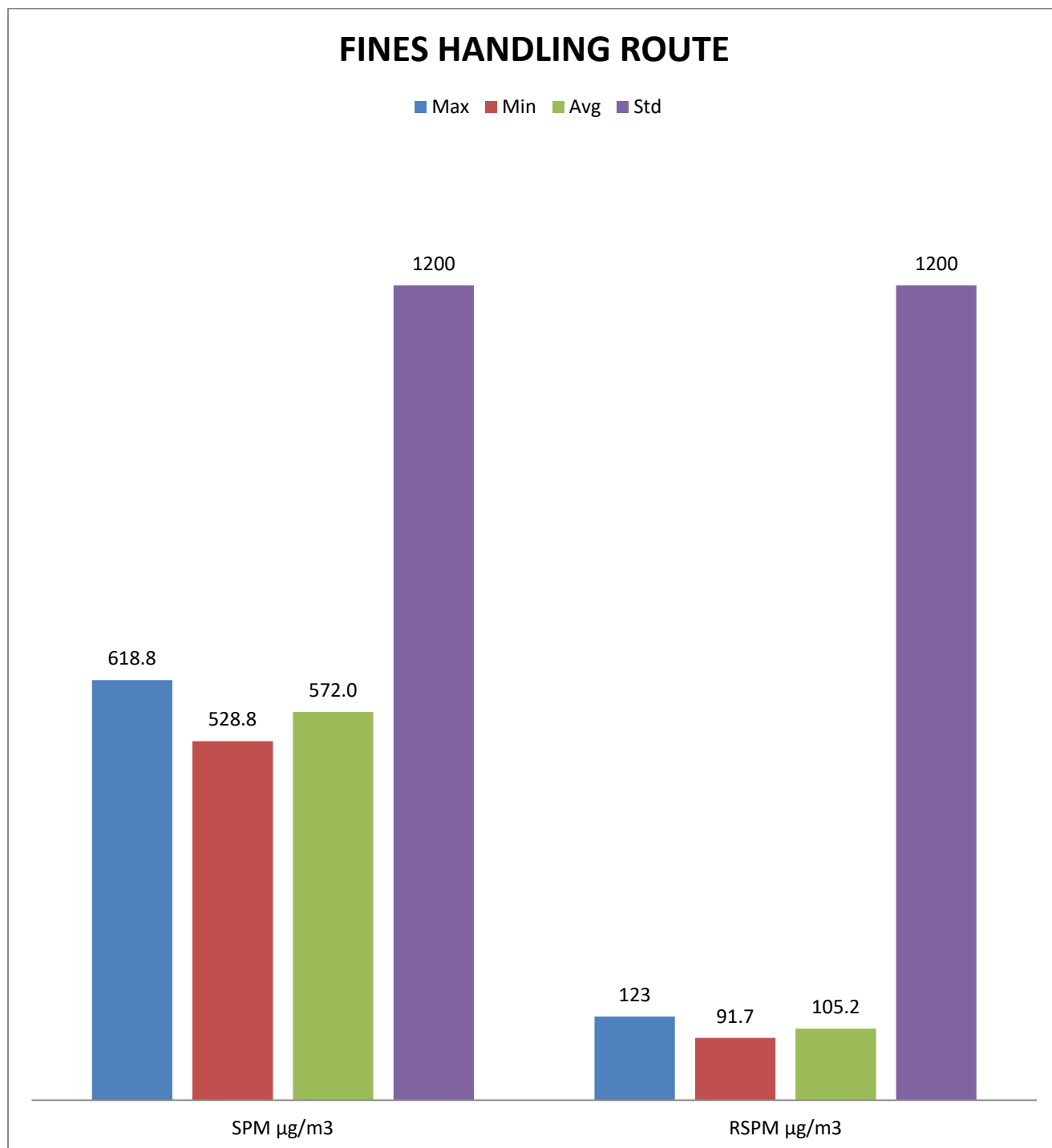

Technical Manager

Authorized By


Quality Manager


3.2.7 Fines Handling Route (F7)

The pollution level in Fines Handling Route for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **618.8** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **528.8** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **91.7** $\mu\text{g}/\text{m}^3$ to **123.0** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/188

Test Report Issue date: 02.11.2025

FUGITIVE EMISSION MONITORING REPORT FOR OCTOBER 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **Fines Handling Route**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM µg/m3	RSPM µg/m3
1.	01-10-2025	Fines Handling Route	535.9	102.4
2.	02-10-2025	Fines Handling Route	605.2	111.0
3.	03-10-2025	Fines Handling Route	606.7	115.0
4.	04-10-2025	Fines Handling Route	574.8	99.1
5.	05-10-2025	Fines Handling Route	603.6	107.9
6.	06-10-2025	Fines Handling Route	550.9	94.6
7.	07-10-2025	Fines Handling Route	596.4	115.1
8.	08-10-2025	Fines Handling Route	599.3	104.1
9.	09-10-2025	Fines Handling Route	562.1	108.9
10.	10-10-2025	Fines Handling Route	564.6	97.6
11.	11-10-2025	Fines Handling Route	596.0	102.3
12.	12-10-2025	Fines Handling Route	528.8	100.0
13.	13-10-2025	Fines Handling Route	539.4	106.4
14.	14-10-2025	Fines Handling Route	577.1	114.0
15.	15-10-2025	Fines Handling Route	552.4	97.4
16.	16-10-2025	Fines Handling Route	577.8	103.2
17.	17-10-2025	Fines Handling Route	613.4	106.9
18.	18-10-2025	Fines Handling Route	564.6	97.6
19.	19-10-2025	Fines Handling Route	567.7	109.8
20.	20-10-2025	Fines Handling Route	530.6	97.2
21.	21-10-2025	Fines Handling Route	554.8	102.8
22.	22-10-2025	Fines Handling Route	564.9	110.5
23.	23-10-2025	Fines Handling Route	616.5	119.5
24.	24-10-2025	Fines Handling Route	536.4	99.5
25.	25-10-2025	Fines Handling Route	563.4	110.6
26.	26-10-2025	Fines Handling Route	603.2	108.4
27.	27-10-2025	Fines Handling Route	538.7	91.7
28.	28-10-2025	Fines Handling Route	618.8	123.0
29.	29-10-2025	Fines Handling Route	549.6	108.9
30.	30-10-2025	Fines Handling Route	534.4	92.0
31.	31-10-2025	Fines Handling Route	603.7	104.3
Average			572.0	105.2

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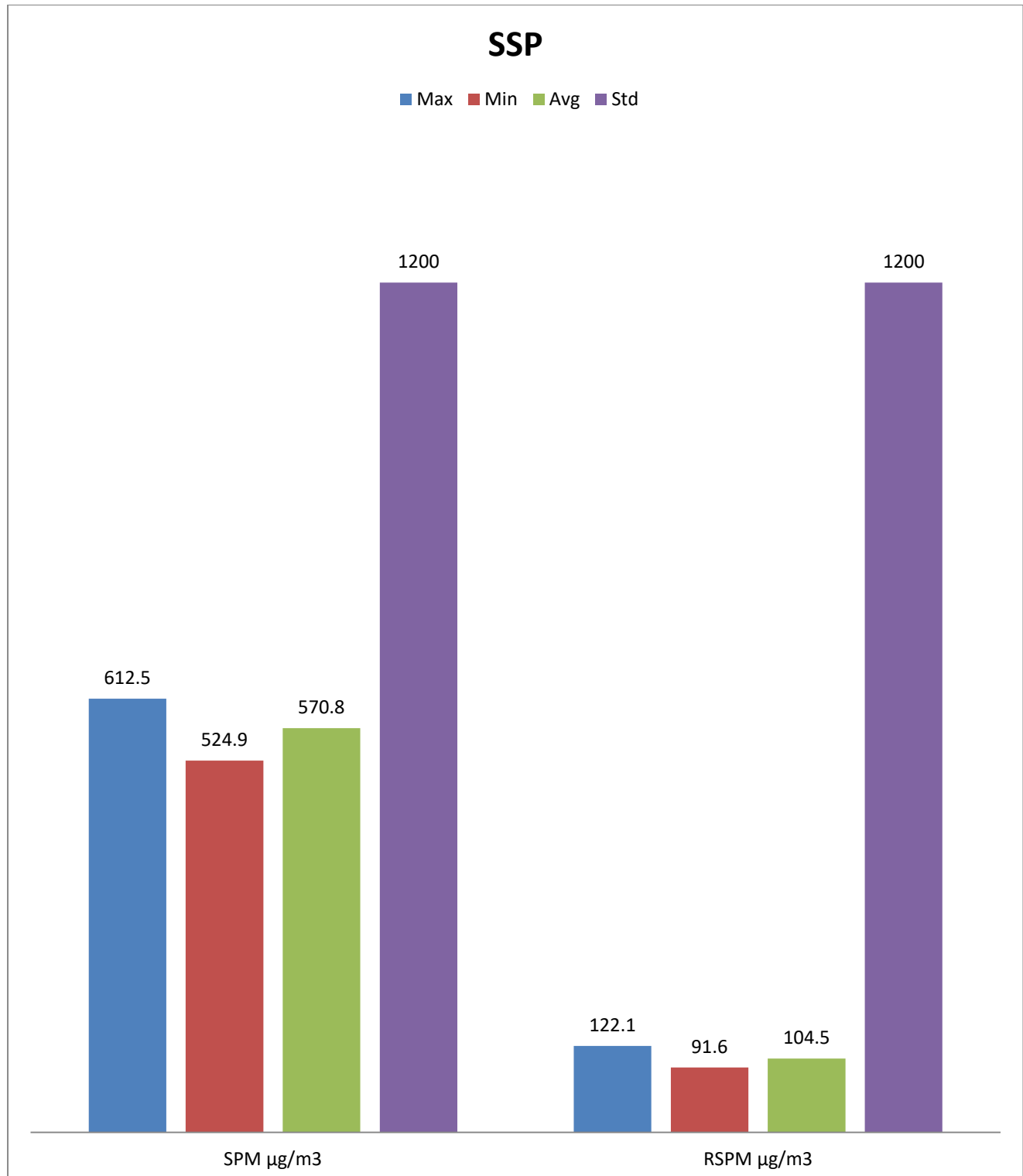

Technical Manager

Authorized By


Quality Manager
B-114,
Second Floor,
Sector-18, Alipah,
Dist. - Bokaro
Jharkhand - 834 001

3.2.8 SSP (F8)

The pollution level in SSP Quarry for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **612.5** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **524.9** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **91.6** $\mu\text{g}/\text{m}^3$ to **122.1** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/189

Test Report Issue date: 02.11.2025

FUGITIVE EMISSION MONITORING REPORT FOR OCTOBER 2025

1. Name of Industry : Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha
2. Monitoring Instruments : RDS (APM 460 BL)
3. Sampling Location : SSP
4. Sample collected by : EMPL representative in presence of Client's representative.

Sl. No.	Date	Sampling Location	Parameter	
			SPM µg/m3	RSPM µg/m3
1.	01-10-2025	SSP	598.1	111.0
2.	02-10-2025	SSP	579.3	98.5
3.	03-10-2025	SSP	527.7	91.6
4.	04-10-2025	SSP	553.7	105.4
5.	05-10-2025	SSP	578.3	99.8
6.	06-10-2025	SSP	581.2	111.1
7.	07-10-2025	SSP	580.4	108.2
8.	08-10-2025	SSP	549.6	99.0
9.	09-10-2025	SSP	611.7	122.1
10.	10-10-2025	SSP	553.1	110.2
11.	11-10-2025	SSP	562.0	96.6
12.	12-10-2025	SSP	601.1	111.6
13.	13-10-2025	SSP	612.5	106.8
14.	14-10-2025	SSP	541.2	96.8
15.	15-10-2025	SSP	578.8	112.1
16.	16-10-2025	SSP	539.2	101.3
17.	17-10-2025	SSP	574.7	101.3
18.	18-10-2025	SSP	612.4	121.2
19.	19-10-2025	SSP	551.0	97.0
20.	20-10-2025	SSP	589.6	109.5
21.	21-10-2025	SSP	570.8	108.4
22.	22-10-2025	SSP	587.3	108.7
23.	23-10-2025	SSP	571.2	107.0
24.	24-10-2025	SSP	526.9	97.6
25.	25-10-2025	SSP	526.3	104.4
26.	26-10-2025	SSP	608.5	104.1
27.	27-10-2025	SSP	610.7	105.6
28.	28-10-2025	SSP	524.9	91.6
29.	29-10-2025	SSP	605.0	103.4
30.	30-10-2025	SSP	552.9	94.1
31.	31-10-2025	SSP	534.6	103.0
Average			570.8	104.5

Verified By

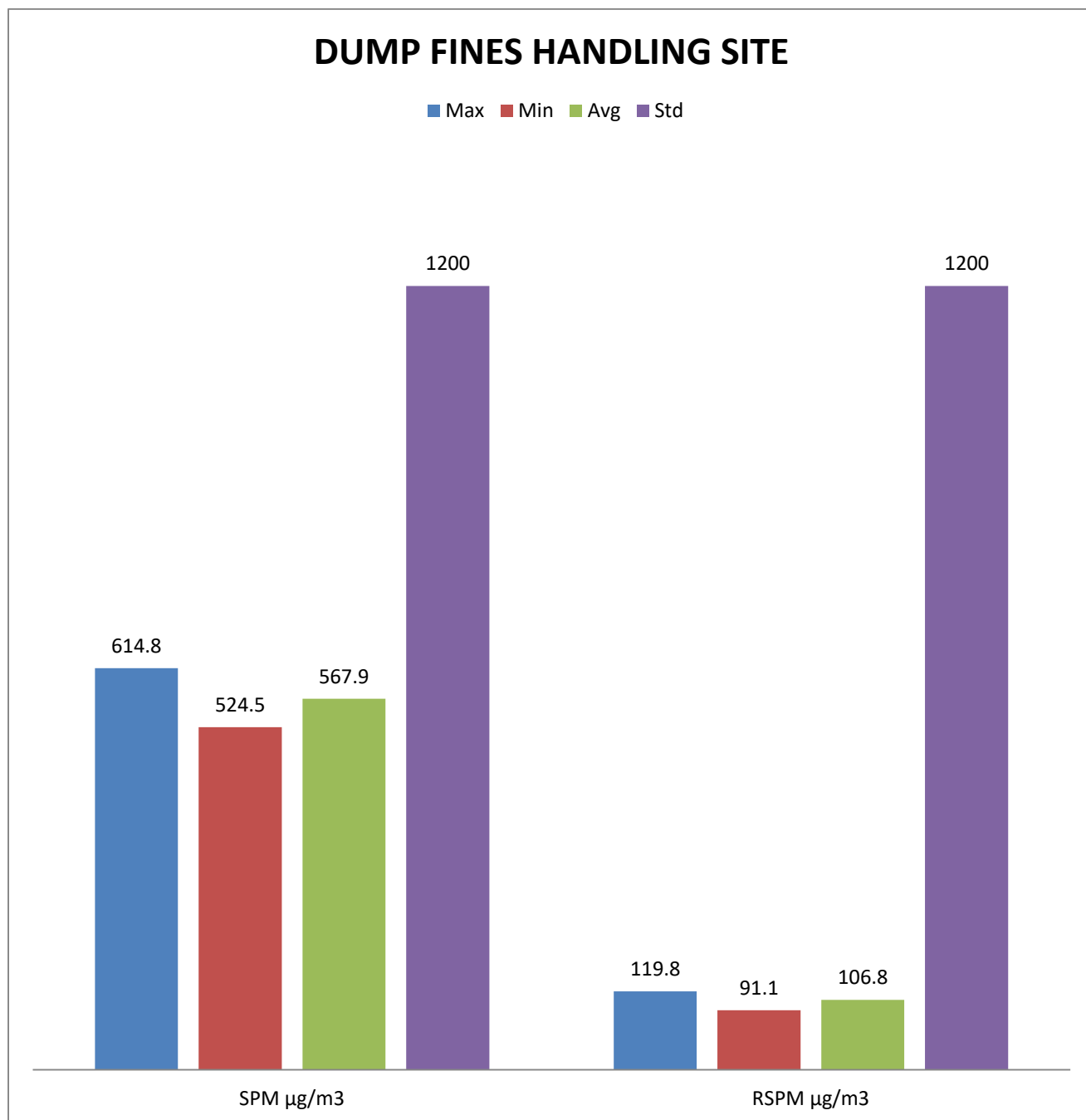

Technical Manager

Authorized By


Quality Manager


3.2.9 Dump Fines Handling Site (F9)

The pollution level in Dump Fines Handling Site for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **614.8** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **524.5** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **91.1** $\mu\text{g}/\text{m}^3$ to **119.8** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/190

Test Report Issue date: 02.11.2025

FUGITIVE EMISSION MONITORING REPORT FOR OCTOBER 2025

1. Name of Industry : **Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha**
2. Monitoring Instruments : **RDS (APM 460 BL)**
3. Sampling Location : **Dump Fines Handling Site**
4. Sample collected by : **EMPL representative in presence of Client's representative.**

Sl. No.	Date	Sampling Location	Parameter	
			SPM µg/m3	RSPM µg/m3
1.	01-10-2025	Dump Fines Handling Site	592.5	112.8
2.	02-10-2025	Dump Fines Handling Site	593.9	112.8
3.	03-10-2025	Dump Fines Handling Site	587.7	109.4
4.	04-10-2025	Dump Fines Handling Site	524.5	106.6
5.	05-10-2025	Dump Fines Handling Site	535.9	97.5
6.	06-10-2025	Dump Fines Handling Site	570.2	111.2
7.	07-10-2025	Dump Fines Handling Site	604.4	114.6
8.	08-10-2025	Dump Fines Handling Site	530.2	91.1
9.	09-10-2025	Dump Fines Handling Site	583.4	113.8
10.	10-10-2025	Dump Fines Handling Site	530.9	100.9
11.	11-10-2025	Dump Fines Handling Site	554.2	105.4
12.	12-10-2025	Dump Fines Handling Site	596.2	111.0
13.	13-10-2025	Dump Fines Handling Site	614.3	115.6
14.	14-10-2025	Dump Fines Handling Site	543.0	93.0
15.	15-10-2025	Dump Fines Handling Site	606.7	108.3
16.	16-10-2025	Dump Fines Handling Site	528.1	92.6
17.	17-10-2025	Dump Fines Handling Site	528.7	104.1
18.	18-10-2025	Dump Fines Handling Site	613.1	118.6
19.	19-10-2025	Dump Fines Handling Site	546.7	109.0
20.	20-10-2025	Dump Fines Handling Site	549.8	99.4
21.	21-10-2025	Dump Fines Handling Site	576.8	106.6
22.	22-10-2025	Dump Fines Handling Site	536.1	106.8
23.	23-10-2025	Dump Fines Handling Site	533.4	92.7
24.	24-10-2025	Dump Fines Handling Site	565.7	98.1
25.	25-10-2025	Dump Fines Handling Site	527.3	104.7
26.	26-10-2025	Dump Fines Handling Site	602.7	108.3
27.	27-10-2025	Dump Fines Handling Site	563.9	104.2
28.	28-10-2025	Dump Fines Handling Site	557.2	110.5
29.	29-10-2025	Dump Fines Handling Site	614.8	119.8
30.	30-10-2025	Dump Fines Handling Site	589.7	114.8
31.	31-10-2025	Dump Fines Handling Site	603.5	116.4
Average			567.9	106.8

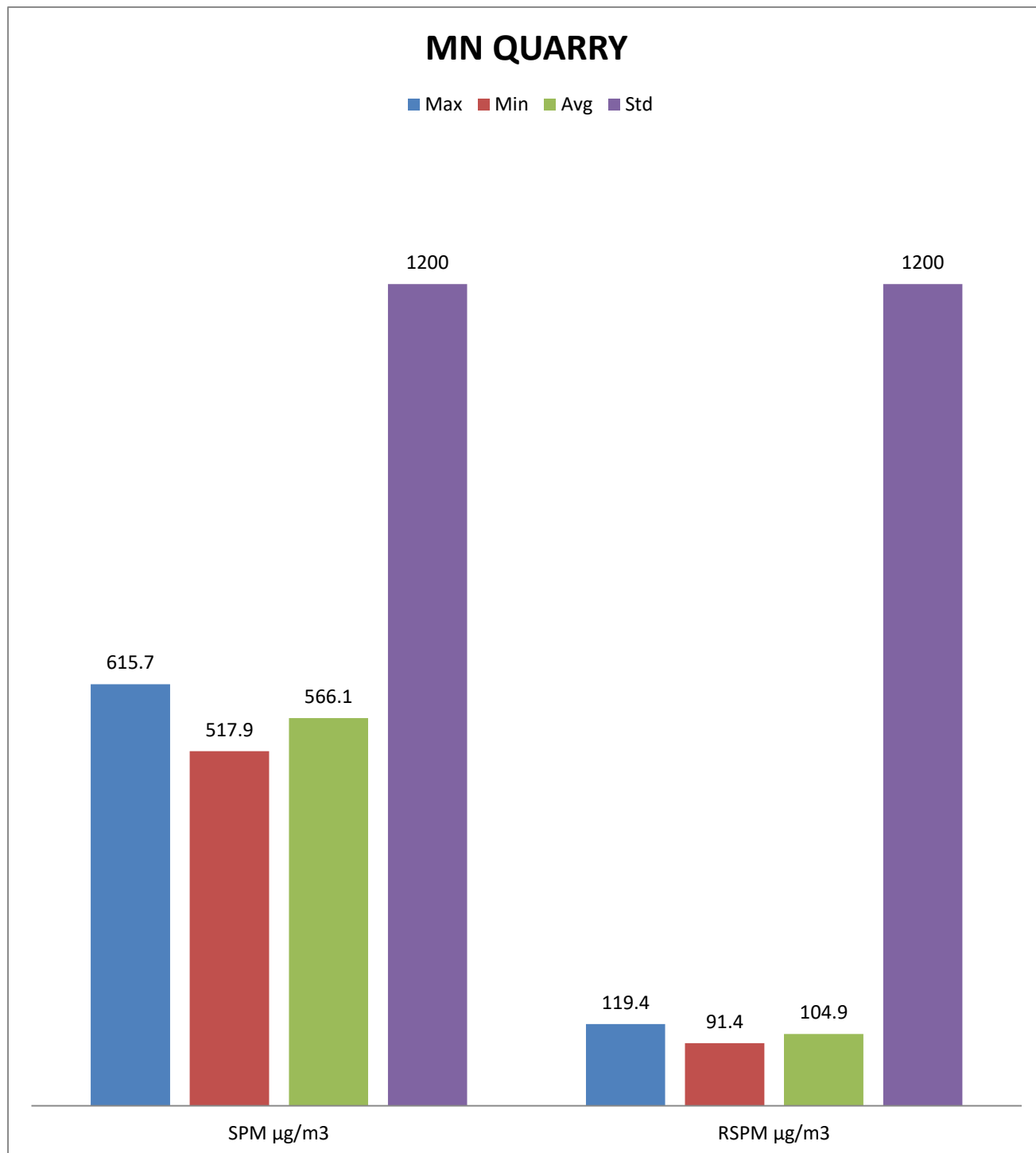
Verified By

Technical Manager
Authorized By

Quality Manager

3.2.10 Mn Quarry (F5)

The pollution level in Mn Quarry for the parameters SPM and RSPM is within the stipulated norms of CPCB. The maximum concentration of SPM was observed **615.7** $\mu\text{g}/\text{m}^3$ whereas minimum concentration was observed **517.9** $\mu\text{g}/\text{m}^3$ and RSPM concentration ranges between **91.4** $\mu\text{g}/\text{m}^3$ to **119.4** $\mu\text{g}/\text{m}^3$ during the month.



Format No: ECO/QS/FORMAT/01

Test Report No: ECO/BOM/FUG/191

Test Report Issue date: 02.11.2025

FUGITIVE EMISSION MONITORING REPORT FOR OCTOBER 2025

1. Name of Industry : Steel Authority of India limited,
Bolani Ores Mines ,At/P.O: Bolani , Dist. Keonjhar , Odisha
2. Monitoring Instruments : RDS (APM 460 BL)
3. Sampling Location : Mn Quarry
4. Sample collected by : EMPL representative in presence of Client's representative.

Sl. No.	Date	Sampling Location	Parameter	
			SPM µg/m3	RSPM µg/m3
1.	01-10-2025	Mn Quarry	534.2	93.8
2.	02-10-2025	Mn Quarry	546.3	98.0
3.	03-10-2025	Mn Quarry	597.0	115.4
4.	04-10-2025	Mn Quarry	577.3	108.9
5.	05-10-2025	Mn Quarry	568.8	97.1
6.	06-10-2025	Mn Quarry	576.5	105.4
7.	07-10-2025	Mn Quarry	588.0	108.2
8.	08-10-2025	Mn Quarry	531.1	108.1
9.	09-10-2025	Mn Quarry	556.6	97.6
10.	10-10-2025	Mn Quarry	567.5	108.0
11.	11-10-2025	Mn Quarry	541.9	101.6
12.	12-10-2025	Mn Quarry	590.7	104.3
13.	13-10-2025	Mn Quarry	573.9	100.3
14.	14-10-2025	Mn Quarry	609.3	119.4
15.	15-10-2025	Mn Quarry	552.7	97.7
16.	16-10-2025	Mn Quarry	559.4	102.5
17.	17-10-2025	Mn Quarry	606.7	106.0
18.	18-10-2025	Mn Quarry	526.2	96.4
19.	19-10-2025	Mn Quarry	584.3	107.9
20.	20-10-2025	Mn Quarry	592.8	111.1
21.	21-10-2025	Mn Quarry	571.6	104.9
22.	22-10-2025	Mn Quarry	528.5	91.4
23.	23-10-2025	Mn Quarry	612.4	106.9
24.	24-10-2025	Mn Quarry	555.0	108.1
25.	25-10-2025	Mn Quarry	528.6	100.6
26.	26-10-2025	Mn Quarry	517.9	118.1
27.	27-10-2025	Mn Quarry	536.9	100.8
28.	28-10-2025	Mn Quarry	572.1	99.5
29.	29-10-2025	Mn Quarry	578.0	114.1
30.	30-10-2025	Mn Quarry	615.7	111.0
31.	31-10-2025	Mn Quarry	550.9	107.6
Average			566.1	104.9

Verified By


Technical Manager

Authorized By


Quality Manager


3.3 Surface/Effluent/Drinking Water Quality:

As per the guideline of CPCB, the following criteria shall be taken into consideration for use of the surface water bodies. Reports below shows the surface water quality analysis results at identified locations near the ML area.

Designated-Best-Use	Class of water	Criteria
Drinking Water Source without conventional treatment but after disinfection	A	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 50 or less pH between 6.5 and 8.5 Dissolved Oxygen 6mg/l or more Biochemical Oxygen Demand 5 days 20C 2mg/l or less
Outdoor bathing (Organized)	B	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 500 or less pH between 6.5 and 8.5 Dissolved Oxygen 5mg/l or more Biochemical Oxygen Demand 5 days 20C 3mg/l or less
Drinking water source after conventional treatment and disinfection	C	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 5000 or less pH between 6 to 9 Dissolved Oxygen 4mg/l or more Biochemical Oxygen Demand 5 days 20C 3mg/l or less
Propagation of Wild life and Fisheries	D	<ul style="list-style-type: none"> pH between 6.5 to 8.5 Dissolved Oxygen 4mg/l or more Free Ammonia (as N) 1.2 mg/l or less
Irrigation, Industrial Cooling, Controlled Waste disposal	E	<ul style="list-style-type: none"> pH between 6.0 to 8.5 Electrical Conductivity at 25C micro mhos/cm Max. 2250 Sodium absorption Ratio Max. 26 Boron Max. 2mg/l
	Below-E	Not Meeting A, B, C, D & E Criteria

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0087/0373/07/2025
		Issue Date of Test Report	05.08.2025
Type of Sample	Surface Water		
Sample Registration No.	0087	Name of Location	Jhikaria Nalla before Joining Karo River
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	22.07.2025	Time of Sample Collection	-
Date of Sample Receipt	24.07.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	24.07.2025	End Date of Analysis	05.08.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0373/07/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	IS 3025(Part-11)	2 - 12	7.61	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA,24th Ed. :2023,2540-D	5 -5000	20.0	-
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	1 -1000	22.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA, 23rd Ed. :2017,5210 B	1 -1000	2.2	3.0
5.	Fluoride as F	mg/l	APHA, 24th Ed.:2023 4500-F D	0.05 -10	0.14	1.5
6.	Nitrate Nitrogen	mg/l	IS 3025 (Part-34)	5-100	5.88	50
7.	Arsenic as As	mg/l	APHA, 24th Ed.: 2023,3125-B	0.01-2	<0.01	0.2
8.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025 (Part-52, Clause No-6)	0.05-20	<0.05	0.05
9.	Iron as Fe	mg/l	IS 3025 (Part-53, Clause No-6)	0.02-50	0.13	3.0
10.	Copper as Cu	mg/l	APHA, 24th Ed.: 2023,3125-B	0.05-5	<0.05	1.5
11.	Zinc as Zn	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-50	0.04	15.0
12.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.05	0.005
13.	Sulfide as S ²⁻	mg/l	IS 3025 (Part-29, Clause No-5)	0.05-10	<0.05	-
14.	Mercury as Hg	mg/l	APHA, 24th Ed.: 2023,3125-B	0.001-1	<0.001	-
15.	Manganese as Mn	mg/l	IS 3025 (Part-46, Clause No-5)	0.1-5.0	<0.1	-
16.	Lead as Pb	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.01-1	<0.01	0.1
17.	Cadmium as Cd	mg/l	APHA, 24th Ed.: 2023,3125-B	0.002-2	<0.002	0.01
18.	Nickel as Ni	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-10	<0.02	-
19.	Oil & Grease as O&G	mg/l	IS 3025 (Part-39, Clause No-5)	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part-26, Clause No-5)	0.5-10	<0.5	0.2
21.	Cyanide as CN ⁻	mg/l	APHA, 24th Ed:2023:2017, 4500-CN(K)	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----



Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0087/0371/07/2025
		Issue Date of Test Report	05.08.2025
Type of Sample	Surface Water		
Sample Registration No.	0087	Name of Location	Karo Near Lease Boundary at Linture Village
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	22.07.2025	Time of Sample Collection	-
Date of Sample Receipt	24.07.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	24.07.2025	End Date of Analysis	05.08.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0371/07/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	IS 3025(Part-11)	2 - 12	7.43	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Ed.:2023,2540-D	5 -5000	28.0	-
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	1 -1000	18.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA, 23rd Ed.:2017,5210 B	1 -1000	2.5	3.0
5.	Fluoride as F	mg/l	APHA, 24th Ed.:2023 4500-F D	0.05 -10	0.14	1.5
6.	Nitrate Nitrogen	mg/l	IS 3025 (Part-34)	5-100	<5	50
7.	Arsenic as As	mg/l	APHA, 24th Ed.: 2023,3125-B	0.01-2	<0.01	0.2
8.	Hexavalent Chromium as Cr ⁺⁺	mg/l	IS 3025 (Part-52, Clause No-6)	0.05-20	<0.05	0.05
9.	Iron as Fe	mg/l	IS 3025 (Part-53, Clause No-6)	0.02-50	0.10	3.0
10.	Copper as Cu	mg/l	APHA, 24th Ed.: 2023,3125-B	0.05-5	<0.05	1.5
11.	Zinc as Zn	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-50	0.06	15.0
12.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.05	0.005
13.	Sulphide as S ²⁻	mg/l	IS 3025 (Part-29, Clause No-5)	0.05-10	<0.05	-
14.	Mercury as Hg	mg/l	APHA, 24th Ed.: 2023,3125-B	0.001-1	<0.001	-
15.	Manganese as Mn	mg/l	IS 3025 (Part-46, Clause No-5)	0.1-5.0	<0.1	-
16.	Lead as Pb	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.01-1	<0.01	0.1
17.	Cadmium as Cd	mg/l	APHA, 24th Ed.: 2023,3125-B	0.002-2	<0.002	0.01
18.	Nickel as Ni	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-10	<0.02	-
19.	Oil & Grease as O&G	mg/l	IS 3025 (Part-39, Clause No-5)	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part-26, Clause No-5)	0.5-10	<0.5	0.2
21.	Cyanide as CN ⁻	mg/l	APHA, 24th Ed:2023:2017, 4500-CN(K)	0.02-10	<0.02	0.05


Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.

---End of Report---



Authorized By

Technical Manager
(Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL.)	Test Report No.	ECO/LAB/SW/0087/0375/07/2025
		Issue Date of Test Report	05.08.2025
Type of Sample	Surface Water		
Sample Registration No.	0087	Name of Location	Panpash Nallah
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	22.07.2025	Time of Sample Collection	-
Date of Sample Receipt	24.07.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	24.07.2025	End Date of Analysis	05.08.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0375/07/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	IS 3025(Part-11)	2 - 12	7.46	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Ed. :2023,2540-D	5 -5000	36.0	-
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	1 -1000	28.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA, 23rd Ed. :2017,5210 B	1 -1000	2.5	3.0
5.	Fluoride as F	mg/l	APHA, 24th Ed.:2023 4500-F D	0.05 -10	0.10	1.5
6.	Nitrate Nitrogen	mg/l	IS 3025 (Part-34)	5-100	6.22	50
7.	Arsenic as As	mg/l	APHA, 24th Ed.: 2023,3125-B	0.01-2	<0.01	0.2
8.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025 (Part-52, Clause No-6)	0.05-20	<0.05	0.05
9.	Iron as Fe	mg/l	IS 3025 (Part-53, Clause No-6)	0.02-50	0.22	3.0
10.	Copper as Cu	mg/l	APHA, 24th Ed. : 2023,3125-B	0.05-5	<0.05	1.5
11.	Zinc as Zn	mg/l	APHA, 23rd Ed. : 2017,3125-B	0.02-50	0.10	15.0
12.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.05	0.005
13.	Sulfide as S ²⁻	mg/l	IS 3025 (Part-29, Clause No-5)	0.05-10	<0.05	-
14.	Mercury as Hg	mg/l	APHA, 24th Ed. : 2023,3125-B	0.001-1	<0.001	-
15.	Manganese as Mn	mg/l	IS 3025 (Part-46, Clause No-5)	0.1-5.0	<0.1	-
16.	Lead as Pb	mg/l	APHA, 23rd Ed. : 2017,3125-B	0.01-1	<0.01	0.1
17.	Cadmium as Cd	mg/l	APHA, 24th Ed. : 2023,3125-B	0.002-2	<0.002	0.01
18.	Nickel as Ni	mg/l	APHA, 23rd Ed. : 2017,3125-B	0.02-10	<0.02	-
19.	Oil & Grease as O&G	mg/l	IS 3025 (Part-39, Clause No-5)	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part-26, Clause No-5)	0.5-10	<0.5	0.2
21.	Cyanide as CN ⁻	mg/l	APHA, 24th Ed:2023:2017, 4500-CN(K)	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

---End of Report---



Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0087/0376/07/2025
		Issue Date of Test Report	05.08.2025
Type of Sample	Surface Water		
Sample Registration No.	0087	Name of Location	Karo River Intake
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	22.07.2025	Time of Sample Collection	-
Date of Sample Receipt	24.07.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	24.07.2025	End Date of Analysis	05.08.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0376/07/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	IS 3025(Part-11)	2 - 12	7.28	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA,24th Ed. :2023,2540-D	5 -5000	32.0	-
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	1 -1000	30.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA, 23rd Ed. :2017,5210 B	1 -1000	2.7	3.0
5.	Fluoride as F	mg/l	APHA, 24th Ed.:2023 4500-F D	0.05 -10	0.10	1.5
6.	Nitrate Nitrogen	mg/l	IS 3025 (Part-34)	5-100	6.12	50
7.	Arsenic as As	mg/l	APHA, 24th Ed.: 2023,3125-B	0.01-2	<0.01	0.2
8.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025 (Part-52, Clause No-6)	0.05-20	<0.05	0.05
9.	Iron as Fe	mg/l	IS 3025 (Part-53, Clause No-6)	0.02-50	0.08	3.0
10.	Copper as Cu	mg/l	APHA, 24th Ed.: 2023,3125-B	0.05-5	<0.05	1.5
11.	Zinc as Zn	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-50	<0.02	15.0
12.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.05	0.005
13.	Sulfide as S ²⁻	mg/l	IS 3025 (Part-29, Clause No-5)	0.05-10	<0.05	-
14.	Mercury as Hg	mg/l	APHA, 24th Ed.: 2023,3125-B	0.001-1	<0.001	-
15.	Manganese as Mn	mg/l	IS 3025 (Part-46, Clause No-5)	0.1-5.0	<0.1	-
16.	Lead as Pb	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.01-1	<0.01	0.1
17.	Cadmium as Cd	mg/l	APHA, 24th Ed.: 2023,3125-B	0.002-2	<0.002	0.01
18.	Nickel as Ni	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-10	<0.02	-
19.	Oil & Grease as O&G	mg/l	IS 3025 (Part-39, Clause No-5)	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part-26, Clause No-5)	0.5-10	<0.5	0.2
21.	Cyanide as CN ⁻	mg/l	APHA, 24th Ed:2023:2017, 4500-CN(K)	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----



Authorized By
[Signature]
Technical Manager
(Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/DW/0087/0373/07/2025
		Issue Date of Test Report	05.08.2025
Type of Sample	Drinking Water		
Sample Registration No.	0087	Name of Location	Mount Club Tap Water
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	22.07.2025	Time of Sample Collection	-
Date of Sample Receipt	24.07.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	24.07.2025	End Date of Analysis	05.08.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0373/07/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.98	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA 2540 D 24th Ed: 2023	5 -5000	<5	-	-
3.	Fluoride as F	mg/l	APHA 24th Edition 4500-F B&D	0.05 -10	0.10	1	1.5
4.	Nitrate Nitrogen	mg/l	IS:3025 (Part 34)	5-100	<5	45	No Relax
5.	Arsenic as As	mg/l	APHA 3125-B-24th Ed.:2023	0.01-2	<0.01	0.01	0.05
6.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025(Part 52, Clause No.6)	0.05-20	<0.05	-	-
7.	Iron as Fe	mg/l	IS 3025 (Part 53, Clause No. 6)	0.02-50	0.08	0.3	No Relax
8.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	0.05	1.5
9.	Zinc as Zn	mg/l	APHA 3125 B, 23rd Ed:2017	0.02-50	0.04	5.0	15.0
10.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.001	0.001	0.002
11.	Sulfide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	0.05	No Relax
12.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.001	0.001	No Relax
13.	Manganese as Mn	mg/l	IS 3025 (Part46, Clause No.5)	0.1-5.0	<0.1	0.1	0.3
14.	Cadmium as Cd	mg/l	APHA 3125 B-24th Ed.:2023	0.002-2	<0.002	0.003	No Relax
15.	Nickel as Ni	mg/l	APHA 3125 B, 23rd Edition:2017	0.02-10	<0.02	0.02	No Relax
16.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	2 -1000	<2	-	-
17.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 5210(B) 23 rd :2017	1 -1000	<1	-	-
18.	Oil & Grease as O&G	mg/l	APHA, 24th Edition 5520 D	2.5-1000	<5	-	-
19.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2	No Relax
20.	Lead as Pb	mg/l	APHA 3125 B, 23rd Ed:2017	0.01-1	<0.01	0.01	No Relax
21.	Cyanide as Cn ⁻	mg/l	APHA, 24th Ed.:2023:2017,4500CN-(K)	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note-

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below Detection Limit

----End of Report----



Authorized By

Technical Manager
(Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/DW/0087/0374/07/2025
		Issue Date of Test Report	05.08.2025
Type of Sample	Drinking Water		
Sample Registration No.	0087	Name of Location	Karo Guest House Tap Water
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	22.07.2025	Time of Sample Collection	-
Date of Sample Receipt	24.07.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	24.07.2025	End Date of Analysis	05.08.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0374/07/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.76	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA 2540 D 24th Ed: 2023	5 -5000	<5	-	-
3.	Fluoride as F	mg/l	APHA 24th Edition 4500-F B&D	0.05 -10	0.12	1	1.5
4.	Nitrate Nitrogen	mg/l	IS:3025 (Part 34)	5-100	<5	45	No Relax
5.	Arsenic as As	mg/l	APHA 3125-B-24th Ed.:2023	0.01-2	<0.01	0.01	0.05
6.	Hexavalent Chromium as Cr ⁶⁺	mg/l	IS 3025(Part 52, Clause No.6)	0.05-20	<0.05	-	-
7.	Iron as Fe	mg/l	IS 3025 (Part 53, Clause No. 6)	0.02-50	0.10	0.3	No Relax
8.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	0.05	1.5
9.	Zinc as Zn	mg/l	APHA 3125 B, 23rd Ed:2017	0.02-50	<0.02	5.0	15.0
10.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.001	0.001	0.002
11.	Sulfide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	0.05	No Relax
12.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.001	0.001	No Relax
13.	Manganese as Mn	mg/l	IS 3025 (Part46, Clause No.5)	0.1-5.0	<0.1	0.1	0.3
14.	Cadmium as Cd	mg/l	APHA 3125 B-24th Ed.:2023	0.002-2	<0.002	0.003	No Relax
15.	Nickel as Ni	mg/l	APHA 3125 B, 23rd Edition:2017	0.02-10	<0.02	0.02	No Relax
16.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	2 -1000	<2	-	-
17.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 5210(B) 23 rd :2017	1 -1000	<1	-	-
18.	Oil & Grease as O&G	mg/l	APHA, 24th Edition 5520 D	2.5-1000	<5	-	-
19.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2	No Relax
20.	Lead as Pb	mg/l	APHA 3125 B, 23rd Ed:2017	0.01-1	<0.01	0.01	No Relax
21.	Cyanide as Cn ⁻	mg/l	APHA, 24th Ed.:2023:2017,4500CN -(K)	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below Detection Limit

---End of Report---



Authorized By

Technical Manager
(Dr. Midhun G)



Ecomen Laboratories Pvt. Ltd.

CIN : U71200KA2024PTC187556 / GSTIN : 29AAICE1418R1Z3

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TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/WW/0087/0375/07/2025
		Issue Date of Test Report	05.08.2025
Type of Sample	Waste Water		
Sample Registration No.	0087	Name of Location	Oil Catch Pit Water Bottom Garbage
Sampling Method	APHA 24 th Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	22.07.2025	Time of Sample Collection	-
Date of Sample Receipt	24.07.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	24.07.2025	End Date of Analysis	05.08.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0375/07/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	GSR 422 (E) Desirable Limit
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.68	5.5-9.0
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540 D	5 -5000	38.0	100.0
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part 58)	1 -1000	20.0	250.0
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	IS 3025 (Part 44)	1 -1000	2.9	30.0
5.	Oil & Grease as O&G	mg/l	IS 3025 (Part39, Clause No.5)	2.5-1000	<2.5	10.0
6.	Fluoride as F	mg/l	APHA 4500 F D-24th Ed.: 2023	0.05 -10	0.24	2.0
7.	Nitrate nitrogen	mg/l	APHA 4500 NO2 B-24 th Ed.: 2023	5-100	7.0	-
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.01-2	0.20	-
9.	Arsenic as As	mg/l	APHA 3125-B-23rd Edition: 2017	0.05-20	<0.01	0.2
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IEC 62321: 2021	0.02-50	<0.05	2.0
11.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	3.0
12.	Zinc as Zn	mg/l	APHA 3125 B-24th Ed.:2023	0.02-50	<0.02	5.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 5530 C,D-24th Ed.:2023	0.05 - 10	<0.05	1.0
14.	Sulphide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	2.0
15.	Nickel as Ni	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.02	3.0
16.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.: 2023	0.1-5.0	<0.001	0.01
17.	Manganese as Mn	mg/l	IS 3025 (Part46, Clause No.5)	0.01-1	<0.1	-
18.	Lead as Pb	mg/l	APHA 3125 B-24th Ed.: 2023	0.002-2	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 3125 B-23rd Ed: 2017	0.02-10	<0.002	2.0
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	4.4	-
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.2

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

---End of Report---



Authorized By

Technical Manager
(Dr. Midhun G)



Ecomen Laboratories Pvt. Ltd.

CIN : U71200KA2024PTC187556 / GSTIN : 29AAICE1418R1Z3

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TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/WW/0087/0376/07/2025
		Issue Date of Test Report	05.08.2025
Type of Sample	Waste Water		
Sample Registration No.	0087	Name of Location	Oil Catch pit water G-Area
Sampling Method	APHA 24 th Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	22.07.2025	Time of Sample Collection	-
Date of Sample Receipt	24.07.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	24.07.2025	End Date of Analysis	05.08.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0376/07/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	GSR 422 (E)
						Desirable Limit
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.74	5.5-9.0
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540 D	5 -5000	40.0	100.0
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part 58)	1 -1000	24.0	250.0
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	IS 3025 (Part 44)	1 -1000	3.2	30.0
5.	Oil & Grease as O&G	mg/l	IS 3025 (Part39, Clause No.5)	2.5-1000	<2.5	10.0
6.	Fluoride as F	mg/l	APHA 4500 F D-24th Ed.: 2023	0.05 -10	0.21	2.0
7.	Nitrate nitrogen	mg/l	APHA 4500 NO2 B-24 th Ed.: 2023	5-100	5.47	-
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.01-2	0.22	-
9.	Arsenic as As	mg/l	APHA 3125-B-23rd Edition: 2017	0.05-20	<0.01	0.2
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IEC 62321: 2021	0.02-50	<0.05	2.0
11.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	3.0
12.	Zinc as Zn	mg/l	APHA 3125 B-24th Ed.:2023	0.02-50	<0.02	5.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 5530 C,D-24th Ed.:2023	0.05 - 10	<0.05	1.0
14.	Sulphide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	2.0
15.	Nickel as Ni	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.02	3.0
16.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.: 2023	0.1-5.0	<0.001	0.01
17.	Manganese as Mn	mg/l	IS 3025 (Part46, Clause No.5)	0.01-1	<0.1	-
18.	Lead as Pb	mg/l	APHA 3125 B-24th Ed.: 2023	0.002-2	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 3125 B-23rd Ed: 2017	0.02-10	<0.002	2.0
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	5.2	-
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.2

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----



Authorized By

Technical Manager
(Dr. Midhun G)

3.3 Surface/Effluent/Drinking Water Quality:

As per the guideline of CPCB, the following criteria shall be taken into consideration for use of the surface water bodies. Reports below shows the surface water quality analysis results at identified locations near the ML area.

Designated-Best-Use	Class of water	Criteria
Drinking Water Source without conventional treatment but after disinfection	A	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 50 or less pH between 6.5 and 8.5 Dissolved Oxygen 6mg/l or more Biochemical Oxygen Demand 5 days 20C 2mg/l or less
Outdoor bathing (Organized)	B	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 500 or less pH between 6.5 and 8.5 Dissolved Oxygen 5mg/l or more Biochemical Oxygen Demand 5 days 20C 3mg/l or less
Drinking water source after conventional treatment and disinfection	C	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 5000 or less pH between 6 to 9 Dissolved Oxygen 4mg/l or more Biochemical Oxygen Demand 5 days 20C 3mg/l or less
Propagation of Wild life and Fisheries	D	<ul style="list-style-type: none"> pH between 6.5 to 8.5 Dissolved Oxygen 4mg/l or more Free Ammonia (as N) 1.2 mg/l or less
Irrigation, Industrial Cooling, Controlled Waste disposal	E	<ul style="list-style-type: none"> pH between 6.0 to 8.5 Electrical Conductivity at 25C micro mhos/cm Max. 2250 Sodium absorption Ratio Max. 26 Boron Max. 2mg/l
	Below-E	Not Meeting A, B, C, D & E Criteria

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0088/0380/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Surface Water		
Sample Registration No.	0088	Name of Location	Karo Near Lease Boundary at Limture Village
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0380/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	IS 3025(Part-11)	2 - 12	7.28	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA,24th Ed. :2023,2540-D	5 -5000	30.0	-
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	1 -1000	28.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA, 23rd Ed. :2017,5210 B	1 -1000	2.8	3.0
5.	Fluoride as F	mg/l	APHA, 24th Ed.:2023 4500-F D	0.05 -10	0.12	1.5
6.	Nitrate Nitrogen	mg/l	IS 3025 (Part-34)	5-100	<5	50
7.	Arsenic as As	mg/l	APHA, 24th Ed.: 2023,3125-B	0.01-2	<0.01	0.2
8.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025 (Part-52, Clause No-6)	0.05-20	<0.05	0.05
9.	Iron as Fe	mg/l	IS 3025 (Part-53, Clause No-6)	0.02-50	0.14	3.0
10.	Copper as Cu	mg/l	APHA, 24th Ed.: 2023,3125-B	0.05-5	<0.05	1.5
11.	Zinc as Zn	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-50	0.08	15.0
12.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.05	0.005
13.	Sulphide as S ²⁻	mg/l	IS 3025 (Part-29, Clause No-5)	0.05-10	<0.05	-
14.	Mercury as Hg	mg/l	APHA, 24th Ed.: 2023,3125-B	0.001-1	<0.001	-
15.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	-
16.	Lead as Pb	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.01-1	<0.01	0.1
17.	Cadmium as Cd	mg/l	APHA, 24th Ed.: 2023,3125-B	0.002-2	<0.002	0.01
18.	Nickel as Ni	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-10	<0.02	-
19.	Oil & Grease as O&G	mg/l	IS 3025 (Part-39, Clause No-5)	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part-26, Clause No-5)	0.5-10	<0.5	0.2
21.	Cyanide as CN ⁻	mg/l	APHA, 24th Ed:2023:2017, 4500-CN(K)	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----



Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0088/0381/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Surface Water		
Sample Registration No.	0088	Name of Location	Jhikaria Nalla before Joining Karo River
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0381/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	IS 3025(Part-11)	2 - 12	7.49	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA,24th Ed. :2023,2540-D	5 -5000	18.0	-
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	1 -1000	20.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA, 23rd Ed. :2017,5210 B	1 -1000	2.4	3.0
5.	Fluoride as F	mg/l	APHA, 24th Ed.:2023 4500-F D	0.05 -10	0.12	1.5
6.	Nitrate Nitrogen	mg/l	IS 3025 (Part-34)	5-100	6.12	50
7.	Arsenic as As	mg/l	APHA, 24th Ed.: 2023,3125-B	0.01-2	<0.01	0.2
8.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025 (Part-52, Clause No-6)	0.05-20	<0.05	0.05
9.	Iron as Fe	mg/l	IS 3025 (Part-53, Clause No-6)	0.02-50	0.15	3.0
10.	Copper as Cu	mg/l	APHA, 24th Ed.: 2023,3125-B	0.05-5	<0.05	1.5
11.	Zinc as Zn	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-50	0.07	15.0
12.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.05	0.005
13.	Sulfide as S ²⁻	mg/l	IS 3025 (Part-29, Clause No-5)	0.05-10	<0.05	-
14.	Mercury as Hg	mg/l	APHA, 24th Ed.: 2023,3125-B	0.001-1	<0.001	-
15.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	-
16.	Lead as Pb	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.01-1	<0.01	0.1
17.	Cadmium as Cd	mg/l	APHA, 24th Ed.: 2023,3125-B	0.002-2	<0.002	0.01
18.	Nickel as Ni	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-10	<0.02	-
19.	Oil & Grease as O&G	mg/l	IS 3025 (Part-39, Clause No-5)	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part-26, Clause No-5)	0.5-10	<0.5	0.2
21.	Cyanide as CN ⁻	mg/l	APHA, 24th Ed:2023:2017, 4500-CN(K)	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Authorized By

Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0088/0382/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Surface Water		
Sample Registration No.	0088	Name of Location	Panpash Nallah
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0382/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	IS 3025(Part-11)	2 - 12	7.50	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA,24th Ed. :2023,2540-D	5 -5000	32.0	-
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	1 -1000	30.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA, 23rd Ed. :2017,5210 B	1 -1000	2.7	3.0
5.	Fluoride as F	mg/l	APHA, 24th Ed.:2023 4500-F D	0.05 -10	0.10	1.5
6.	Nitrate Nitrogen	mg/l	IS 3025 (Part-34)	5-100	6.56	50
7.	Arsenic as As	mg/l	APHA, 24th Ed.: 2023,3125-B	0.01-2	<0.01	0.2
8.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025 (Part-52, Clause No-6)	0.05-20	<0.05	0.05
9.	Iron as Fe	mg/l	IS 3025 (Part-53, Clause No-6)	0.02-50	0.20	3.0
10.	Copper as Cu	mg/l	APHA, 24th Ed.: 2023,3125-B	0.05-5	<0.05	1.5
11.	Zinc as Zn	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-50	0.08	15.0
12.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.05	0.005
13.	Sulfide as S ²⁻	mg/l	IS 3025 (Part-29, Clause No-5)	0.05-10	<0.05	-
14.	Mercury as Hg	mg/l	APHA, 24th Ed.: 2023,3125-B	0.001-1	<0.001	-
15.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	-
16.	Lead as Pb	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.01-1	<0.01	0.1
17.	Cadmium as Cd	mg/l	APHA, 24th Ed.: 2023,3125-B	0.002-2	<0.002	0.01
18.	Nickel as Ni	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-10	<0.02	-
19.	Oil & Grease as O&G	mg/l	IS 3025 (Part-39, Clause No-5)	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part-26, Clause No-5)	0.5-10	<0.5	0.2
21.	Cyanide as CN ⁻	mg/l	APHA, 24th Ed:2023:2017, 4500-CN(K)	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0088/0383/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Surface Water		
Sample Registration No.	0088	Name of Location	Karo River Intake
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0383/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	IS 3025(Part-11)	2 - 12	7.34	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA,24th Ed. :2023,2540-D	5 -5000	36.0	-
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	1 -1000	32.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA, 23rd Ed. :2017,5210 B	1 -1000	2.9	3.0
5.	Fluoride as F	mg/l	APHA, 24th Ed.:2023 4500-F D	0.05 -10	0.08	1.5
6.	Nitrate Nitrogen	mg/l	IS 3025 (Part-34)	5-100	5.86	50
7.	Arsenic as As	mg/l	APHA, 24th Ed.: 2023,3125-B	0.01-2	<0.01	0.2
8.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025 (Part-52, Clause No-6)	0.05-20	<0.05	0.05
9.	Iron as Fe	mg/l	IS 3025 (Part-53, Clause No-6)	0.02-50	0.12	3.0
10.	Copper as Cu	mg/l	APHA, 24th Ed.: 2023,3125-B	0.05-5	<0.05	1.5
11.	Zinc as Zn	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-50	<0.02	15.0
12.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.05	0.005
13.	Sulfide as S ²⁻	mg/l	IS 3025 (Part-29, Clause No-5)	0.05-10	<0.05	-
14.	Mercury as Hg	mg/l	APHA, 24th Ed.: 2023,3125-B	0.001-1	<0.001	-
15.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	-
16.	Lead as Pb	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.01-1	<0.01	0.1
17.	Cadmium as Cd	mg/l	APHA, 24th Ed.: 2023,3125-B	0.002-2	<0.002	0.01
18.	Nickel as Ni	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-10	<0.02	-
19.	Oil & Grease as O&G	mg/l	IS 3025 (Part-39, Clause No-5)	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part-26, Clause No-5)	0.5-10	<0.5	0.2
21.	Cyanide as CN ⁻	mg/l	APHA, 24th Ed:2023:2017, 4500-CN(K)	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Authorized By

Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/DW/0088/0375/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Drinking Water		
Sample Registration No.	0088	Name of Location	Mount Club Tap Water
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0375/08/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.90	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA 2540 D 24th Ed: 2023	5 -5000	<5	-	-
3.	Fluoride as F	mg/l	APHA 24th Edition 4500-F B&D	0.05 -10	0.12	1	1.5
4.	Nitrate Nitrogen	mg/l	IS:3025 (Part 34)	5-100	<5	45	No Relax
5.	Arsenic as As	mg/l	APHA 3125-B-24th Ed.:2023	0.01-2	<0.01	0.01	0.05
6.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025(Part 52,Clause No.6)	0.05-20	<0.05	-	-
7.	Iron as Fe	mg/l	IS 3025 (Part 53, Clause No. 6)	0.02-50	0.06	0.3	No Relax
8.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	0.05	1.5
9.	Zinc as Zn	mg/l	APHA 3125 B, 23rd Ed:2017	0.02-50	0.08	5.0	15.0
10.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.001	0.001	0.002
11.	Sulfide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	0.05	No Relax
12.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.001	0.001	No Relax
13.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	0.1	0.3
14.	Cadmium as Cd	mg/l	APHA 3125 B-24th Ed.:2023	0.002-2	<0.002	0.003	No Relax
15.	Nickel as Ni	mg/l	APHA 3125 B, 23rd Edition:2017	0.02-10	<0.02	0.02	No Relax
16.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	2 -1000	<2	-	-
17.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 5210(B) 23rd:2017	1 -1000	<1	-	-
18.	Oil & Grease as O&G	mg/l	APHA, 24th Edition 5520 D	2.5-1000	<5	-	-
19.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2	No Relax
20.	Lead as Pb	mg/l	APHA 3125 B, 23rd Ed:2017	0.01-1	<0.01	0.01	No Relax
21.	Cyanide as Cn ⁻	mg/l	APHA, 24th Ed.:2023:2017,4500CN -(K)	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note-

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below Detection Limit

----End of Report----

Authorized By

Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/DW/0088/0376/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Drinking Water		
Sample Registration No.	0088	Name of Location	Karo Guest House Tap Water
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0376/08/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.80	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA 2540 D 24th Ed: 2023	5 -5000	<5	-	-
3.	Fluoride as F	mg/l	APHA 24th Edition 4500-F B&D	0.05 -10	0.12	1	1.5
4.	Nitrate Nitrogen	mg/l	IS:3025 (Part 34)	5-100	<5	45	No Relax
5.	Arsenic as As	mg/l	APHA 3125-B-24th Ed.:2023	0.01-2	<0.01	0.01	0.05
6.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025(Part 52,Clause No.6)	0.05-20	<0.05	-	-
7.	Iron as Fe	mg/l	IS 3025 (Part 53, Clause No. 6)	0.02-50	0.12	0.3	No Relax
8.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	0.05	1.5
9.	Zinc as Zn	mg/l	APHA 3125 B, 23rd Ed:2017	0.02-50	<0.02	5.0	15.0
10.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.001	0.001	0.002
11.	Sulfide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	0.05	No Relax
12.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.001	0.001	No Relax
13.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	0.1	0.3
14.	Cadmium as Cd	mg/l	APHA 3125 B-24th Ed.:2023	0.002-2	<0.002	0.003	No Relax
15.	Nickel as Ni	mg/l	APHA 3125 B, 23rd Edition:2017	0.02-10	<0.02	0.02	No Relax
16.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	2 -1000	<2	-	-
17.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 5210(B) 23rd:2017	1 -1000	<1	-	-
18.	Oil & Grease as O&G	mg/l	APHA, 24th Edition 5520 D	2.5-1000	<5	-	-
19.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2	No Relax
20.	Lead as Pb	mg/l	APHA 3125 B, 23rd Ed:2017	0.01-1	<0.01	0.01	No Relax
21.	Cyanide as Cn ⁻	mg/l	APHA, 24th Ed.:2023:2017,4500CN -(K)	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below Detection Limit

----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/DW/0088/0377/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Ground Water		
Sample Registration No.	0088	Name of Location	Balagoda Village
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0377/08/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.86	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA 2540 D 24th Ed: 2023	5 -5000	<5	-	-
3.	Fluoride as F	mg/l	APHA 24th Edition 4500-F B&D	0.05 -10	0.14	1	1.5
4.	Nitrate Nitrogen	mg/l	IS:3025 (Part 34)	5-100	<5	45	No Relax
5.	Arsenic as As	mg/l	APHA 3125-B-24th Ed.:2023	0.01-2	<0.01	0.01	0.05
6.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025(Part 52,Clause No.6)	0.05-20	<0.05	-	-
7.	Iron as Fe	mg/l	IS 3025 (Part 53, Clause No. 6)	0.02-50	0.10	0.3	No Relax
8.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	0.05	1.5
9.	Zinc as Zn	mg/l	APHA 3125 B, 23rd Ed:2017	0.02-50	0.08	5.0	15.0
10.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.001	0.001	0.002
11.	Sulfide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	0.05	No Relax
12.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.001	0.001	No Relax
13.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	0.1	0.3
14.	Cadmium as Cd	mg/l	APHA 3125 B-24th Ed.:2023	0.002-2	<0.002	0.003	No Relax
15.	Nickel as Ni	mg/l	APHA 3125 B, 23rd Edition:2017	0.02-10	<0.02	0.02	No Relax
16.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	2 -1000	<2	-	-
17.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 5210(B) 24 th Ed.:2023:2017	1 -1000	<1	-	-
18.	Oil & Grease as O&G	mg/l	APHA, 24th Edition 5520 D	2.5-1000	<5	-	-
19.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2	No Relax
20.	Lead as Pb	mg/l	APHA 3125 B, 23rd Ed:2017	0.01-1	<0.01	0.01	No Relax
21.	Cyanide as Cn ⁻	mg/l	APHA, 24th Ed.:2023:2017,4500CN -(K)	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note-

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below Detection Limit

----End of Report----

Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/DW/0088/0378/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Ground Water		
Sample Registration No.	0088	Name of Location	Bolani Gouda Basti
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0378/08/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.86	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA 2540 D 24th Ed: 2023	5 -5000	<5	-	-
3.	Fluoride as F	mg/l	APHA 24th Edition 4500-F B&D	0.05 -10	0.12	1	1.5
4.	Nitrate Nitrogen	mg/l	IS:3025 (Part 34)	5-100	<5	45	No Relax
5.	Arsenic as As	mg/l	APHA 3125-B-24th Ed.:2023	0.01-2	<0.01	0.01	0.05
6.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025(Part 52,Clause No.6)	0.05-20	<0.05	-	-
7.	Iron as Fe	mg/l	IS 3025 (Part 53, Clause No. 6)	0.02-50	0.12	0.3	No Relax
8.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	0.05	1.5
9.	Zinc as Zn	mg/l	APHA 3125 B, 23rd Ed:2017	0.02-50	<0.02	5.0	15.0
10.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.001	0.001	0.002
11.	Sulfide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	0.05	No Relax
12.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.001	0.001	No Relax
13.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	0.1	0.3
14.	Cadmium as Cd	mg/l	APHA 3125 B-24th Ed.:2023	0.002-2	<0.002	0.003	No Relax
15.	Nickel as Ni	mg/l	APHA 3125 B, 23rd Edition:2017	0.02-10	<0.02	0.02	No Relax
16.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	2 -1000	<2	-	-
17.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 5210(B) 24 th Ed.:2023:2017	1 -1000	<1	-	-
18.	Oil & Grease as O&G	mg/l	APHA, 24th Edition 5520 D	2.5-1000	<5	-	-
19.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2	No Relax
20.	Lead as Pb	mg/l	APHA 3125 B, 23rd Ed:2017	0.01-1	<0.01	0.01	No Relax
21.	Cyanide as Cn ⁻	mg/l	APHA, 24th Ed.:2023:2017,4500CN -(K)	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.
- BDL- Below Detection Limit

----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/DW/0088/0379/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Ground Water		
Sample Registration No.	0088	Name of Location	Bolani Basti Bolani Village
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0379/08/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
22.	pH	-	IS 3025 (Part 11)	2 - 12	6.72	6.5-8.5	No Relax
23.	Total Suspended Solids as TSS	mg/l	APHA 2540 D 24th Ed: 2023	5 -5000	<5	-	-
24.	Fluoride as F	mg/l	APHA 24th Edition 4500-F B&D	0.05 -10	0.08	1	1.5
25.	Nitrate Nitrogen	mg/l	IS:3025 (Part 34)	5-100	<5	45	No Relax
26.	Arsenic as As	mg/l	APHA 3125-B-24th Ed.:2023	0.01-2	<0.01	0.01	0.05
27.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025(Part 52,Clause No.6)	0.05-20	<0.05	-	-
28.	Iron as Fe	mg/l	IS 3025 (Part 53, Clause No. 6)	0.02-50	0.12	0.3	No Relax
29.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	0.05	1.5
30.	Zinc as Zn	mg/l	APHA 3125 B, 23rd Ed:2017	0.02-50	<0.02	5.0	15.0
31.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.001	0.001	0.002
32.	Sulfide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	0.05	No Relax
33.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.001	0.001	No Relax
34.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	0.1	0.3
35.	Cadmium as Cd	mg/l	APHA 3125 B-24th Ed.:2023	0.002-2	<0.002	0.003	No Relax
36.	Nickel as Ni	mg/l	APHA 3125 B, 23rd Edition:2017	0.02-10	<0.02	0.02	No Relax
37.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	2 -1000	<2	-	-
38.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 5210(B) 24 th Ed.:2023:2017	1 -1000	<1	-	-
39.	Oil & Grease as O&G	mg/l	APHA, 24th Edition 5520 D	2.5-1000	<5	-	-
40.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2	No Relax
41.	Lead as Pb	mg/l	APHA 3125 B, 23rd Ed:2017	0.01-1	<0.01	0.01	No Relax
42.	Cyanide as Cn ⁻	mg/l	APHA, 24th Ed.:2023:2017,4500CN -(K)	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note:

5. Test results relate to the items sampled & tested.
6. Test report shall not be reproduced except in full without approval of the laboratory.
7. The test samples will be disposed of after one Month from the date of issue of test report.
8. BDL- Below Detection Limit

----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/WW/0088/0384/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Waste Water		
Sample Registration No.	0088	Name of Location	Oil Catch Pit Water Bottom Garbage
Sampling Method	APHA 24 th Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0385/08/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	GSR 422 (E)
						Desirable Limit
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.62	5.5-9.0
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540 D	5 -5000	40.0	100.0
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part 58)	1 -1000	26.0	250.0
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	IS 3025 (Part 44)	1 -1000	2.9	30.0
5.	Oil & Grease as O&G	mg/l	IS 3025 (Part39, Clause No.5)	2.5-1000	<2.5	10.0
6.	Fluoride as F	mg/l	APHA 4500 F D-24th Ed.: 2023	0.05 -10	0.16	2.0
7.	Nitrate nitrogen	mg/l	APHA 4500 NO ₂ B-24 th Ed.: 2023	5-100	6.62	-
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.01-2	0.16	-
9.	Arsenic as As	mg/l	APHA 3125-B-23rd Edition: 2017	0.05-20	<0.01	0.2
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IEC 62321: 2021	0.02-50	<0.05	2.0
11.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	3.0
12.	Zinc as Zn	mg/l	APHA 3125 B-24th Ed.:2023	0.02-50	<0.02	5.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 5530 C,D-24th Ed.:2023	0.05 - 10	<0.05	1.0
14.	Sulphide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	2.0
15.	Nickel as Ni	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.02	3.0
16.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.: 2023	0.1-5.0	<0.001	0.01
17.	Manganese as Mn	mg/l	APHA 3125 B-23rd Ed.:2023	0.01-1	<0.1	-
18.	Lead as Pb	mg/l	APHA 3125 B-24th Ed.: 2023	0.002-2	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 3125 B-23rd Ed: 2017	0.02-10	<0.002	2.0
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	4.2	-
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.2

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/WW/0088/0386/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Waste Water		
Sample Registration No.	0088	Name of Location	Oil Catch pit water G-Area
Sampling Method	APHA 24 th Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0386/08/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	GSR 422 (E)
						Desirable Limit
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.68	5.5-9.0
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540 D	5 -5000	36.0	100.0
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part 58)	1 -1000	22.0	250.0
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	IS 3025 (Part 44)	1 -1000	3.0	30.0
5.	Oil & Grease as O&G	mg/l	IS 3025 (Part39, Clause No.5)	2.5-1000	<2.5	10.0
6.	Fluoride as F	mg/l	APHA 4500 F D-24th Ed.: 2023	0.05 -10	0.20	2.0
7.	Nitrate nitrogen	mg/l	APHA 4500 NO2 B-24 th Ed.: 2023	5-100	5.72	-
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.01-2	0.20	-
9.	Arsenic as As	mg/l	APHA 3125-B-23rd Edition: 2017	0.05-20	<0.01	0.2
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IEC 62321: 2021	0.02-50	<0.05	2.0
11.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	3.0
12.	Zinc as Zn	mg/l	APHA 3125 B-24th Ed.:2023	0.02-50	<0.02	5.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 5530 C,D-24th Ed.:2023	0.05 - 10	<0.05	1.0
14.	Sulphide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	2.0
15.	Nickel as Ni	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.02	3.0
16.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.: 2023	0.1-5.0	<0.001	0.01
17.	Manganese as Mn	mg/l	APHA 3125 B-23rd Ed.:2023	0.01-1	<0.1	-
18.	Lead as Pb	mg/l	APHA 3125 B-24th Ed.: 2023	0.002-2	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 3125 B-23rd Ed: 2017	0.02-10	<0.002	2.0
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	4.8	-
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.2

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

(Vikas Kumar)

(Abhishek Kumar Singh)

3.3 Surface/Effluent/Drinking Water Quality:

As per the guideline of CPCB, the following criteria shall be taken into consideration for use of the surface water bodies. Reports below shows the surface water quality analysis results at identified locations near the ML area.

Designated-Best-Use	Class of water	Criteria
Drinking Water Source without conventional treatment but after disinfection	A	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 50 or less pH between 6.5 and 8.5 Dissolved Oxygen 6mg/l or more Biochemical Oxygen Demand 5 days 20C 2mg/l or less
Outdoor bathing (Organized)	B	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 500 or less pH between 6.5 and 8.5 Dissolved Oxygen 5mg/l or more Biochemical Oxygen Demand 5 days 20C 3mg/l or less
Drinking water source after conventional treatment and disinfection	C	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 5000 or less pH between 6 to 9 Dissolved Oxygen 4mg/l or more Biochemical Oxygen Demand 5 days 20C 3mg/l or less
Propagation of Wild life and Fisheries	D	<ul style="list-style-type: none"> pH between 6.5 to 8.5 Dissolved Oxygen 4mg/l or more Free Ammonia (as N) 1.2 mg/l or less
Irrigation, Industrial Cooling, Controlled Waste disposal	E	<ul style="list-style-type: none"> pH between 6.0 to 8.5 Electrical Conductivity at 25C micro mhos/cm Max. 2250 Sodium absorption Ratio Max. 26 Boron Max. 2mg/l
	Below-E	Not Meeting A, B, C, D & E Criteria

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Steel Authority of India limited, Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha	Test Report No.	ECO/LAB/SW/0088/0380/08/2025
		Issue Date of Test Report	05.10.2025
Type of Sample	Surface Water		
Sample Registration No.	0088	Name of Location	Karo Near Lease Boundary at Linture Village
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	12.09.2025	Time of Sample Collection	-
Date of Sample Receipt	15.09.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	15.09.2025	End Date of Analysis	30.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0380/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.20	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	26.0	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	1 -1000	22.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	2.4	3.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A,B,D	0.05 -10	0.14	1.5
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A.C	5-100	<5	50
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B	0.01-2	<0.01	0.2
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-20	<0.05	0.05
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.02-50	0.18	3.0
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 CRA,B	0.05-5	<0.05	1.5
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-50	0.12	15.0
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05 - 10	<0.05	0.005
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05-10	<0.05	-
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.001-1	<0.001	-
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5.0	<0.1	-
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.01	0.1
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.002	0.01
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.02	-
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By


 Technical Manager
 (Vikas Kumar)

Authorized By


 Quality Manager
 (Dr. Abhishek Kumar Singh)


TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Steel Authority of India limited, Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha	Test Report No.	ECO/LAB/SW/0088/0381/08/2025
		Issue Date of Test Report	05.10.2025
Type of Sample	Surface Water		
Sample Registration No.	0088	Name of Location	Jhikaria Nalla before Joining Karo River
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	12.09.2025	Time of Sample Collection	-
Date of Sample Receipt	15.09.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	15.09.2025	End Date of Analysis	30.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0381/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.31	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	28.0	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A,C	1 -1000	30.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	2.2	3.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	0.05 -10	0.10	1.5
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A.C	5-100	5.44	50
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B	0.01-2	<0.01	0.2
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-20	<0.05	0.05
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.02-50	0.20	3.0
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 CRA,B	0.05-5	<0.05	1.5
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-50	0.06	15.0
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05 - 10	<0.05	0.005
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05-10	<0.05	-
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.001-1	<0.001	-
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5.0	<0.1	-
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.01	0.1
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.002	0.01
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.02	-
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23 rd Ed: 2017	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.**Note:**

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By

(Signature)
Technical Manager
(Vikas Kumar)

Authorized By

(Signature)
Quality Manager
(Dr. Abhishek Kumar Singh)



TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Steel Authority of India limited, Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha	Test Report No.	ECO/LAB/SW/0088/0382/08/2025
		Issue Date of Test Report	05.10.2025
Type of Sample	Surface Water		
Sample Registration No.	0088	Name of Location	Panpash Nallah
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	12.09.2025	Time of Sample Collection	-
Date of Sample Receipt	15.09.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	15.09.2025	End Date of Analysis	30.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0382/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.38	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	24.0	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A,C	1 -1000	27.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	2.8	3.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A,B,D	0.05 -10	0.14	1.5
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A,C	5-100	6.22	50
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B	0.01-2	<0.01	0.2
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-20	<0.05	0.05
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.02-50	0.22	3.0
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 CRA,B	0.05-5	<0.05	1.5
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-50	0.08	15.0
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05 - 10	<0.05	0.005
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05-10	<0.05	-
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.001-1	<0.001	-
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5.0	<0.1	-
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.01	0.1
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.002	0.01
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.02	-
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By


Technical Manager
(Vikas Kumar)

Authorized By


Quality Manager
(Dr. Abhishek Kumar Singh)



TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Steel Authority of India limited, Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha	Test Report No.	ECO/LAB/SW/0088/0383/08/2025
		Issue Date of Test Report	05.10.2025
Type of Sample	Surface Water		
Sample Registration No.	0088	Name of Location	Karo River Intake
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	12.09.2025	Time of Sample Collection	-
Date of Sample Receipt	15.09.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	15.09.2025	End Date of Analysis	30.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0383/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.38	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	32.0	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A,C	1 -1000	34.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	2.7	3.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B,D	0.05 -10	0.06	1.5
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A,C	5-100	6.0	50
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B	0.01-2	<0.01	0.2
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-20	<0.05	0.05
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.02-50	0.18	3.0
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 CRA,B	0.05-5	<0.05	1.5
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-50	<0.02	15.0
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05 - 10	<0.05	0.005
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05-10	<0.05	-
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.001-1	<0.001	-
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5.0	<0.1	-
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.01	0.1
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.002	0.01
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.02	-
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By


Technical Manager
(Vikas Kumar)

Authorized By


Quality Manager
(Dr. Abhishek Kumar Singh)



TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Steel Authority of India limited, Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha	Test Report No.	ECO/LAB/DW/0088/0375/08/2025
		Issue Date of Test Report	05.10.2025
Type of Sample	Drinking Water		
Sample Registration No.	0088	Name of Location	Mount Club Tap Water
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	12.09.2025	Time of Sample Collection	-
Date of Sample Receipt	15.09.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	15.09.2025	End Date of Analysis	30.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0375/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.02	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	<5	-	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	0.05 -10	0.14	1	1.5
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	5-100	<5	45	No Relax
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	0.01-2	<0.01	0.01	0.05
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 .C	0.05-20	<0.05	-	-
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03 2-F	0.02-50	0.10	0.3	No Relax
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-5	<0.05	0.05	1.5
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.02-50	0.06	5.0	15.0
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 Cra B	0.05 - 10	<0.001	0.001	0.002
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-10	<0.05	0.05	No Relax
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	0.001	No Relax
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.1-5.0	<0.1	0.1	0.3
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.002-2	<0.002	0.003	No Relax
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.02	0.02	No Relax
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	2 -1000	<2	-	-
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	1 -1000	<1	-	-
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	2.5-1000	<5	-	-
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.5-10	<0.5	0.2	No Relax
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.01-1	<0.01	0.01	No Relax
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note-

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below Detection Limit

----End of Report----

Verified By


 Technical Manager
 (Vikas Kumar)

Authorized By


 Quality Manager
 (Dr. Abhishek Kumar Singh)


TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Steel Authority of India limited, Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha	Test Report No.	ECO/LAB/DW/0088/0376/08/2025
		Issue Date of Test Report	05.10.2025
Type of Sample	Drinking Water		
Sample Registration No.	0088	Name of Location	Karo Guest House Tap Water
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	12.09.2025	Time of Sample Collection	-
Date of Sample Receipt	15.09.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	15.09.2025	End Date of Analysis	30.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0376/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	6.86	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	<5	-	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	0.05 -10	0.14	1	1.5
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	5-100	<5	45	No Relax
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	0.01-2	<0.01	0.01	0.05
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 .C	0.05-20	<0.05	-	-
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03 2-F	0.02-50	0.12	0.3	No Relax
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-5	<0.05	0.05	1.5
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.02-50	<0.02	5.0	15.0
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 Cra B	0.05 - 10	<0.001	0.001	0.002
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-10	<0.05	0.05	No Relax
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	0.001	No Relax
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.1-5.0	<0.1	0.1	0.3
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.002-2	<0.002	0.003	No Relax
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.02	0.02	No Relax
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	2 -1000	<2	-	-
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	1 -1000	<1	-	-
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	2.5-1000	<5	-	-
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.5-10	<0.5	0.2	No Relax
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.01-1	<0.01	0.01	No Relax
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.
- BDL- Below Detection Limit

----End of Report----

Verified By

Technical Manager
(Vikas Kumar)

Authorized By

Quality Manager
(Dr. Abhishek Kumar Singh)



TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Steel Authority of India limited, Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha	Test Report No.	ECO/LAB/WW/0088/0384/08/2025
Type of Sample	Waste Water	Issue Date of Test Report	05.10.2025
Sample Registration No.	0088	Name of Location	Oil Catch Pit Water Bottom Garbage
Sampling Method	APHA 24 th Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	12.09.2025	Time of Sample Collection	-
Date of Sample Receipt	15.09.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	15.09.2025	End Date of Analysis	30.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C Humidity: 53%	Sample Quantity	As per Requirement
		Sample ID Code	ECO/LAB/0385/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	GSR 422 (E) Desirable Limit
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	6.42	5.5-9.0
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	48.0	100.0
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	1 -1000	38.0	250.0
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	3.6	30.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	2.5-1000	<2.5	10.0
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A.C	0.05 -10	0.12	2.0
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B,A,C	5-100	5.86	-
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.01-2	0.12	-
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.05-20	<0.01	0.2
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.300 CRA	0.02-50	<0.05	2.0
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-5	<0.05	3.0
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-50	<0.02	5.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05 - 10	<0.05	1.0
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.05-10	<0.05	2.0
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.02	3.0
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5.0	<0.001	0.01
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.1	-
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.002	2.0
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	4.0	-
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23 rd Ed: 2017	0.02-10	<0.02	0.2

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By


 Technical Manager
 (Vikas Kumar)

Authorized By


 Quality Manager
 (Dr. Abhishek Kumar Singh)


TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Steel Authority of India limited, Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha	Test Report No.	ECO/LAB/WW/0088/0386/08/2025
		Issue Date of Test Report	05.10.2025
Type of Sample	Waste Water		
Sample Registration No.	0088	Name of Location	Oil Catch pit water G-Area
Sampling Method	APHA 24 th Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	12.09.2025	Time of Sample Collection	-
Date of Sample Receipt	15.09.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	15.09.2025	End Date of Analysis	30.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0386/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	GSR 422 (E)
						Desirable Limit
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	6.80	5.5-9.0
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	42.0	100.0
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	1 -1000	28.0	250.0
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	3.4	30.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	2.5-1000	<2.5	10.0
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A.C	0.05 -10	0.14	2.0
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B,A,C	5-100	7.04	-
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.01-2	0.24	-
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.05-20	<0.01	0.2
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.300 CRA	0.02-50	<0.05	2.0
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-5	<0.05	3.0
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-50	<0.02	5.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05 - 10	<0.05	1.0
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.05-10	<0.05	2.0
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.02	3.0
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5.0	<0.001	0.01
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.1	-
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.002	2.0
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	3.9	-
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23 rd Ed: 2017	0.02-10	<0.02	0.2

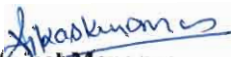
Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By


 Technical Manager
 (Vikas Kumar)

Authorized By


 Quality Manager
 (Dr. Abhishek Kumar Singh)


3.3 Surface/Effluent/Drinking Water Quality:

As per the guideline of CPCB, the following criteria shall be taken into consideration for use of the surface water bodies. Reports below shows the surface water quality analysis results at identified locations near the ML area.

Designated-Best-Use	Class of water	Criteria
Drinking Water Source without conventional treatment but after disinfection	A	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 50 or less pH between 6.5 and 8.5 Dissolved Oxygen 6mg/l or more Biochemical Oxygen Demand 5 days 20C 2mg/l or less
Outdoor bathing (Organized)	B	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 500 or less pH between 6.5 and 8.5 Dissolved Oxygen 5mg/l or more Biochemical Oxygen Demand 5 days 20C 3mg/l or less
Drinking water source after conventional treatment and disinfection	C	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 5000 or less pH between 6 to 9 Dissolved Oxygen 4mg/l or more Biochemical Oxygen Demand 5 days 20C 3mg/l or less
Propagation of Wild life and Fisheries	D	<ul style="list-style-type: none"> pH between 6.5 to 8.5 Dissolved Oxygen 4mg/l or more Free Ammonia (as N) 1.2 mg/l or less
Irrigation, Industrial Cooling, Controlled Waste disposal	E	<ul style="list-style-type: none"> pH between 6.0 to 8.5 Electrical Conductivity at 25C micro mhos/cm Max. 2250 Sodium absorption Ratio Max. 26 Boron Max. 2mg/l
	Below-E	Not Meeting A, B, C, D & E Criteria

2.3.1 Surface Water Quality:

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0089/0387/10/2025
		Issue Date of Test Report	05.11.2025
Type of Sample	Surface Water		
Sample Registration No.	0089	Name of Location	Karo Near Lease Boundary at Linture Village
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	04.10.2025	Time of Sample Collection	-
Date of Sample Receipt	06.10.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	06.10.2025	End Date of Analysis	15.10.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0387/10/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.12	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	20.0	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	1 -1000	18.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	2.4	3.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	2.5-1000	<0.1	0.1
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A.C	0.05 -10	0.15	1.5
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B	5-100	<5	50
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-50	0.28	3.0
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.01-2	0.04	0.2
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 CRA,B	0.05-20	<0.05	0.05
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-5	0.16	1.5
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02 -50	0.21	15.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05-10	<0.05	0.005
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.05-10	<0.05	-
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	-
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	-
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5	<0.1	-
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.002	0.01
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	-
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By


Technical Manager

Authorized By


Quality Manager


TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0088/0388/10/2025
		Issue Date of Test Report	05.11.2025
Type of Sample	Surface Water		
Sample Registration No.	0089	Name of Location	Jhikaria Nalla before Joining Karo River
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	04.10.2025	Time of Sample Collection	-
Date of Sample Receipt	06.10.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	06.10.2025	End Date of Analysis	15.10.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0388/10/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.37	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	22.0	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	1 -1000	26.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	2.4	3.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	2.5-1000	<0.10	0.1
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A.C	0.05 -10	0.29	1.5
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B	5-100	5.21	50
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-50	0.31	3.0
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.01-2	<0.01	0.2
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 CRA,B	0.05-20	<0.05	0.05
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-5	0.06	1.5
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02 -50	0.12	15.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05-10	<0.05	0.005
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.05-10	<0.05	-
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	-
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	-
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5	<0.1	-
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.002	0.01
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	-
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By


Technical Manager

Authorized By


Quality Manager


TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0089/0389/10/2025
		Issue Date of Test Report	05.11.2025
Type of Sample	Surface Water		
Sample Registration No.	0089	Name of Location	Panpash Nallah
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	04.10.2025	Time of Sample Collection	-
Date of Sample Receipt	06.10.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	06.10.2025	End Date of Analysis	15.10.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0389/10/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.27	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	28.0	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A,C	1 -1000	27.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	2.5	3.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	2.5-1000	<0.10	0.1
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A.C	0.05 -10	0.27	1.5
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B	5-100	<5	50
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-50	0.22	3.0
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.01-2	<0.01	0.2
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 CRA,B	0.05-20	<0.05	0.05
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-5	0.08	1.5
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02 -50	0.14	15.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05-10	<0.05	0.005
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.05-10	<0.05	-
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	-
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	-
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5	<0.1	-
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.02	0.1
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.002	0.01
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	-
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By


Technical Manager

Authorized By


Quality Manager


TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0089/0390/10/2025
		Issue Date of Test Report	05.11.2025
Type of Sample	Surface Water		
Sample Registration No.	0089	Name of Location	Karo River Intake
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	04.10.2025	Time of Sample Collection	-
Date of Sample Receipt	06.10.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	06.10.2025	End Date of Analysis	15.10.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0390/10/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.44	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	28.0	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A,C	1 -1000	30.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	2.5	3.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	2.5-1000	<0.10	0.1
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A.C	0.05 -10	0.47	1.5
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B	5-100	5.42	50
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-50	0.21	3.0
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.01-2	0.06	0.2
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 CRA,B	0.05-20	<0.05	0.05
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-5	<0.05	1.5
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02 -50	0.18	15.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05-10	<0.05	0.005
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.05-10	<0.05	-
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	-
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	-
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5	<0.1	-
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.002	0.01
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	-
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below Detection Limit

----End of Report----

Verified By


Technical Manager

Authorized By


Quality Manager
B-118,
Second Floor,
Sector-14, Alipah,
Dist. ...

2.3.2 Effluent Waste Water Quality:

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/WW/0089/0393/10/2025
		Issue Date of Test Report	05.11.2025
Type of Sample	Waste Water		
Sample Registration No.	0089	Name of Location	Oil Catch Pit Water Bottom Garbage
Sampling Method	APHA 24 th Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	04.10.2025	Time of Sample Collection	-
Date of Sample Receipt	06.10.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	06.10.2025	End Date of Analysis	15.10.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0393/10/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	GSR 422 (E)
						Desirable Limit
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	6.67	5.5-9.0
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	40.0	100.0
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	1 -1000	32.0	250.0
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	3.3	30.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A,B,D	0.05 -10	<0.05	2.0
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A.C	0.5-10	0.20	0.2
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B,A,C	0.02-50	5.44	-
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-20	0.22	2.0
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	5-100	<5	-
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.300 CRA	0.01-2	<0.01	0.2
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-5	<0.05	3.0
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-50	0.22	5.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05 - 10	<0.05	1.0
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.05-10	<0.05	2.0
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.02	3.0
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	0.01
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5	<0.1	-
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.002	2.0
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	2.5-1000	2.8	10
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.2

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.
- BDL- Below Detection Limit

----End of Report----

Verified By


Technical Manager

Authorized By


Quality Manager


TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/WW/0089/0394/10/2025
		Issue Date of Test Report	05.11.2025
Type of Sample	Waste Water		
Sample Registration No.	0089	Name of Location	Oil Catch pit water G-Area
Sampling Method	APHA 24 th Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	04.10.2025	Time of Sample Collection	-
Date of Sample Receipt	06.10.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	06.10.2025	End Date of Analysis	15.10.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0394/10/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	GSR 422 (E) Desirable Limit
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	6.88	5.5-9.0
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	34.0	100.0
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	1 -1000	24.0	250.0
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	3.0	30.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	0.05 -10	<0.05	2.0
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A.C	0.5-10	0.14	0.2
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B,A,C	0.02-50	6.02	-
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-20	0.20	2.0
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	5-100	<5	-
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.300 CRA	0.01-2	<0.01	0.2
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-5	<0.05	3.0
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-50	<0.02	5.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05 - 10	<0.05	1.0
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.05-10	<0.05	2.0
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.02	3.0
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	0.01
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5	<0.1	-
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.002	2.0
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	2.5-1000	3.4	10
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.2

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below Detection Limit

----End of Report----

Verified By


Technical Manager

Authorized By


Quality Manager


2.3.3 Drinking Water Quality:

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/DW/0089/0391/10/2025
		Issue Date of Test Report	05.11.2025
Type of Sample	Drinking Water		
Sample Registration No.	0089	Name of Location	Mount Club Tap Water
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	04.10.2025	Time of Sample Collection	-
Date of Sample Receipt	06.10.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	06.10.2025	End Date of Analysis	15.10.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0391/10/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.06	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	<5	-	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	1 -1000	<1	-	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	<1	-	-
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	2.5-1000	<2.5	-	-
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 .C	0.05 -10	0.08	1.0	1.5
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03 2-F	5-100	<5	45.0	No Relax
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-50	<0.05	0.3	No Relax
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.01-2	<0.1	0.01	0.05
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 Cra B	0.05-5	<0.05	-	-
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-5	<0.05	0.05	1.5
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02 - 50	<0.02	5.0	15
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	1-10	<0.1	0.007	0.007
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.05-10	<0.05	0.05	No Relax
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	0.001	No Relax
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.007-1	<0.007	0.007	No Relax
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5	<0.1	0.10	0.30
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.01	0.05	No Relax
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.007-2	<0.007	0.007	No Relax
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.05	0.20	1.0
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note-

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below Detection Limit

----End of Report----

Verified By


Technical Manager

Authorized By


Quality Manager


TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/DW/0089/0392/10/2025
		Issue Date of Test Report	05.11.2025
Type of Sample	Drinking Water		
Sample Registration No.	0089	Name of Location	Karo Guest House Tap Water
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	04.10.2025	Time of Sample Collection	-
Date of Sample Receipt	06.10.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	06.10.2025	End Date of Analysis	15.10.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0392/10/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.04	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	<5	-	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	1 -1000	<1	-	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	<1	-	-
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	2.5-1000	<0.01	0.01	0.05
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 .C	0.05-10	<0.05	1.0	1.5
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03 2-F	5-100	<5	45.0	No Relax
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-50	0.08	0.3	No Relax
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.01-2	<0.01	0.01	0.05
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 Cra B	0.05-5	<0.05	-	-
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-5	<0.05	0.05	1.5
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-50	<0.02	5.0	15
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	1-10	<0.1	0.007	0.007
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.05-10	<0.05	0.05	No Relax
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	0.001	No Relax
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.007-1	<0.007	0.007	No Relax
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5	<0.1	0.10	0.30
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.01	0.05	No Relax
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.007-2	<0.007	0.007	No Relax
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.05	0.20	1.0
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note:

5. Test results relate to the items sampled & tested.
6. Test report shall not be reproduced except in full without approval of the laboratory.
7. The test samples will be disposed of after one Month from the date of issue of test report.
8. BDL- Below Detection Limit

----End of Report----

Verified By


Technical Manager

Authorized By


Quality Manager


ANNEXURE-III
**REPORT OF PEAK PARTICLE
VELOCITY**

The peak particle velocity was monitored in June- 2025 at these following locations (at 300 m distance or within the nearest habitation):

SL. NO.	LOCATION
1	Near F-Area Hopper
2	Near Bolani Hospital
3	Near DAV Public School Bolani
4	Near Laxmi Mandap Bolani

इंडियन ऑयल कॉर्पोरेशन लिमिटेड
बी. डी.जी (ई) / एस.एम.एस. एक्सप्लोसिव्स संयंत्र, बोलानी
पोष्ट: बोलानी, जिला: केउंनझर (ओडिशा) - 758037
Indian Oil Corporation Limited
BDG (E): SMS Explosives Support Plant, Bolani
P.O. Bolani, Dist.-Keonjhar (Odisha) - 758037



बी.डी.जी (एक्सप्लोसिव्स)
BDG (Explosives)

IOCL-Expl./Boloni/BOM/E&L/GVR/2025-26/01

Date: 25.06.2025

To,
The General Manager (E&L)
Bolani Ore Mines, SAIL RSP
Keonjhar, Odisha-758037

Subject: Submission of Report of Ground Vibration Test due to blasting.

Ref: BOM/E&L/B-2025-600 Dated 08.04.2025

Dear Sir,

With reference to your above referred request letter for conducting blast induced ground vibration study at Bolani Ores mines site for statutory purpose, we have conducted the study from 01.06.2025 to 15.06.2025. Planned timeline of vibration study was as follows:

Location	Date of study	Remark
Near F Area Hopper	03.06.2025	Blast induced ground vibration
Near Bolani Hospital	10.06.2025	
Near DAV Public School	12.06.2025	
Near Lakshmi Mandap	12.06.2025	

Study was carried out in the presence our team and the officer nominated by GM (E&L) BOM. Detailed report is attached herewith. Hope this will serve your purpose.

Thanking you,

For, **Indian Oil Corporation Limited**

Manish Kumar

Assistant Manager (Marketing)

Unit In-Charge, IOCL Plant-Bolani

Manish Kumar

Asst. Manager, MKTG

Indian Oil Corporation Limited

Bulk Expl. Support Plant, Bolani-758037

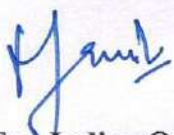
Dist-Keonjhar (Odisha)

पंजीकृत कार्यालय: जी-9, अली यावर जंग मार्ग बांद्रा (पूर्व), मुम्बई - 400 051 (भारत)

Regd. Office : G-9, Ali Yavar Jung Marg, Bandra (East), Mumbai - 400 051 (India)

CIN - L23201MH1959GO1011388

VIBRATION-CUM-BLAST REPORT						
SN	PARTICULARS	REMARKS				
1	Date of Blast	03.06.2025				
2	Location /Bench	F AREA NEAR HOPPER				
3	Hole Dia (mm)	150 mm				
4	No. of Holes	70				
5	Bench height (m)	5				
	Drilling Parameters					
6	Avg. Depth of the hole (m)	5.5				
7	Spacing (m)	3.0				
8	Burden (m)	2.3				
9	Block Volume (m3)	2656.5				
11	Type of Initiators	NONEL				
12	Average Explosive Charge per hole (Kg)	54.72				
13	Maximum Explosives Charge per Delay (Kg)	60.15				
14	Total Primer used (Kg)	10.50				
15	Total Bulk Explosives (Kg)	3820.00				
16	Total Explosive used	3830.50				
	VIBRATION MEASUREMENT:					
17	Distance of Vibration M/c from Blast Site	Approx 400.5 m from Blast face				
18	Max. PPV at Orthogonal Directions (mm/sec.)	T	V	L		
		2.152	1.513	2.317		
19	Corresponding Frequency (Hz)	4.7	5.3	5.1		
20	Peak Vector Sum	2.907 mm/sec at 0.908 sec				
	POST BLAST OBSERVATION					
21	Fragmentation	Good				
22	Fly Rock	Nil				
23	Muck Profile	As required				



For, Indian Oil Corporation Limited

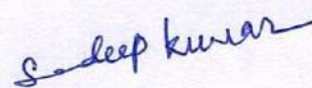
Manish Kumar

Asst. Manager, MKTG

Indian Oil Corporation Limited

Bulk Expl. Support Plant, Bolani-758037

Dist-Keonjhar (Odisha)



Blasting I/C

BOM, RSP, SAIL

Sandeep Kumar

DGM (Mining)

BOM-SAIL-RSP

Event Report

Date/Time Long at 13:44:06 June 3, 2025
Trigger Source Geo: 0.250 mm/s, Mic: 2.000 pa.(L)
Range Geo: 254.0 mm/s
Record Time 10.315 sec (Auto=5Sec) at 2048 sps
Operator/Setup: Operator/IOCL GVR.MMB

Serial Number UM16986 V 10-89 Micromate ISEE
Battery Level 3.8 Volts
Unit Calibration December 30, 2024 by UES New Delhi
File Name __TEMP.EVT

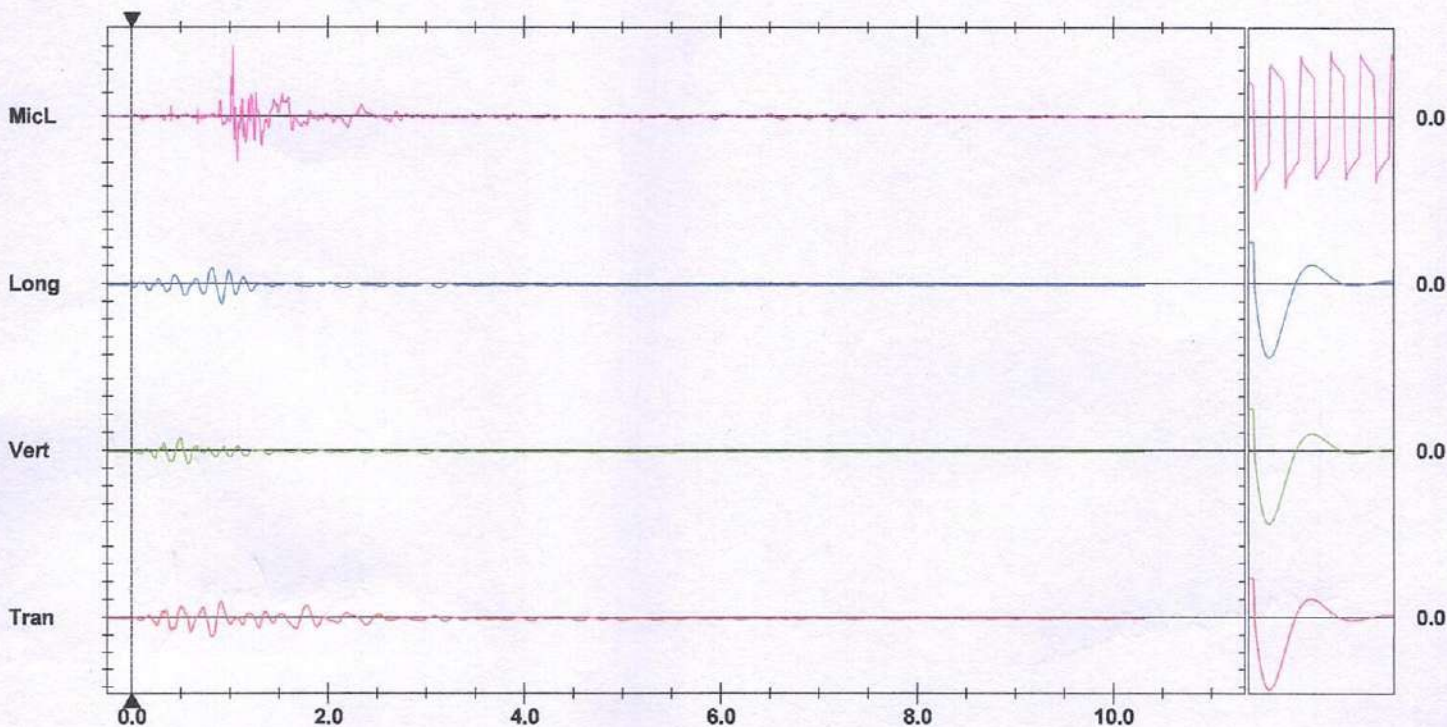
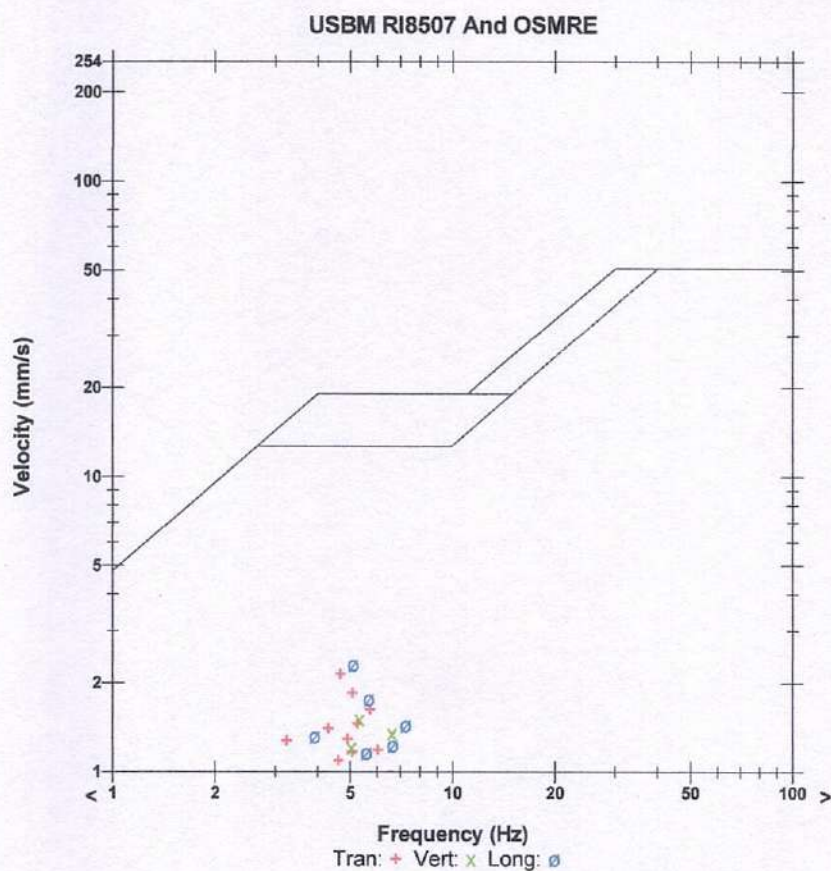
GPS Location **Latitude** **Longitude**
 Source: 022 5.483 N 085 18.129 E
 Sensor1: 022 5.616 N 085 18.313 E
 Distance: 400.5 m

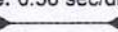
Notes
 Location: BOLANI F AREA
 Client: BOLANI ORES MINES
 User Name: INDIAN OIL CORPRATION LIMITED
 General:

Microphone Linear Weighting
PSPL 15.24 pa.(L) at 1.029 sec
ZC Freq 15.5 Hz
Channel Test Passed (Freq = 19.7 Hz Amp = 1128 mv)

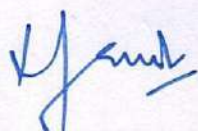
	Tran	Vert	Long	
PPV	2.152	1.513	2.317	mm/s
ZC Freq	4.7	5.3	5.1	Hz
Time (Rel. to Trig)	0.811	0.568	0.915	sec
Peak Acceleration	0.015	0.013	0.013	g
Peak Displacement	0.074	0.055	0.067	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.3	Hz
Overswing Ratio	4.0	4.4	3.9	

Peak Vector Sum 2.907 mm/s at 0.908 sec

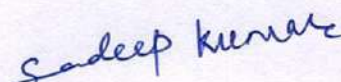


Time Scale: 0.50 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 5.000 pa.(L)/div
 Trigger = 

<u>VIBRATION-CUM-BLAST REPORT</u>				
SN	PARTICULARS	REMARKS		
1	Date of Blast	10.06.2025		
2	Location /Bench	D AREA BOLANI		
3	Hole Dia (mm)	100 mm		
4	No. of Holes	55		
5	Bench height (m)	5		
	Drilling Parameters			
6	Avg. Depth of the hole (m)	4.8		
7	Spacing (m)	2.9		
8	Burden (m)	2.4		
9	Block Volume (m3)	1837.44		
11	Type of Initiators	NONEL		
12	Average Explosive Charge per hole (Kg)	24.33		
13	Maximum Explosives Charge per Delay (Kg)	25.15		
14	Total Primer used (Kg)	8.25		
15	Total Bulk Explosives (Kg)	1330.00		
16	Total Explosive used	1338.25		
	VIBRATION MEASUREMENT:			
17	Distance of Vibration M/c from Blast Site	Approx 1047.9 m from Blast face		
18	Max. PPV at Orthogonal Directions (mm/sec.)	T	V	L
		0.315	0.512	0.481
19	Corresponding Frequency (Hz)	4.0	3.1	3.0
20	Peak Vector Sum	0.534 mm/sec at 1.510 sec		
	POST BLAST OBSERVATION			
21	Fragmentation	Good		
22	Fly Rock	Nil		
23	Muck Profile	As required		



For, Indian Oil Corporation Limited
Manish Kumar
 Asst. Manager, MKTG
 Indian Oil Corporation Limited
 Bulk Expl. Support Plant, Bolani-758037
 Dist-Keonjhar (Odisha)



Blasting I/C
BOM, RSP, SAIL
Sandeep Kumar
 DGM (Mining)
 BOM-SAIL-RSP

Date/Time Long at 11:32:04 June 10, 2025
Trigger Source Geo: 0.150 mm/s, Mic: 2.000 pa.(L)
Range Geo: 254.0 mm/s
Record Time 16.038 sec (Auto=5Sec) at 2048 sps
Operator/Setup: Operator/IOCL GVR.MMB

Serial Number UM16986 V 10-89 Micromate ISEE
Battery Level 3.7 Volts
Unit Calibration December 30, 2024 by UES New Delhi
File Name __TEMP.EVT

GPS Location **Latitude** **Longitude**
 Source: 022 7.517 N 085 19.999 E
 Sensor1: 022 6.952 N 085 20.031 E
 Distance: 1047.9 m

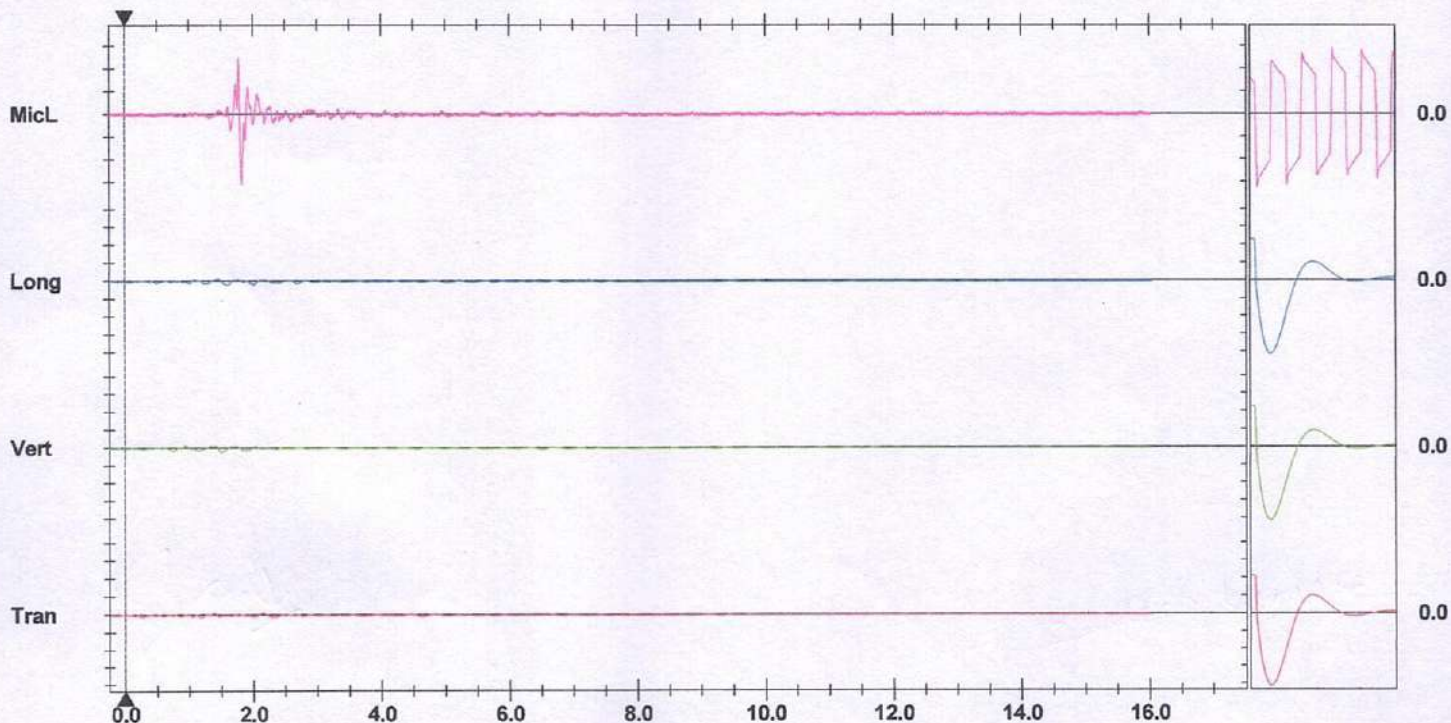
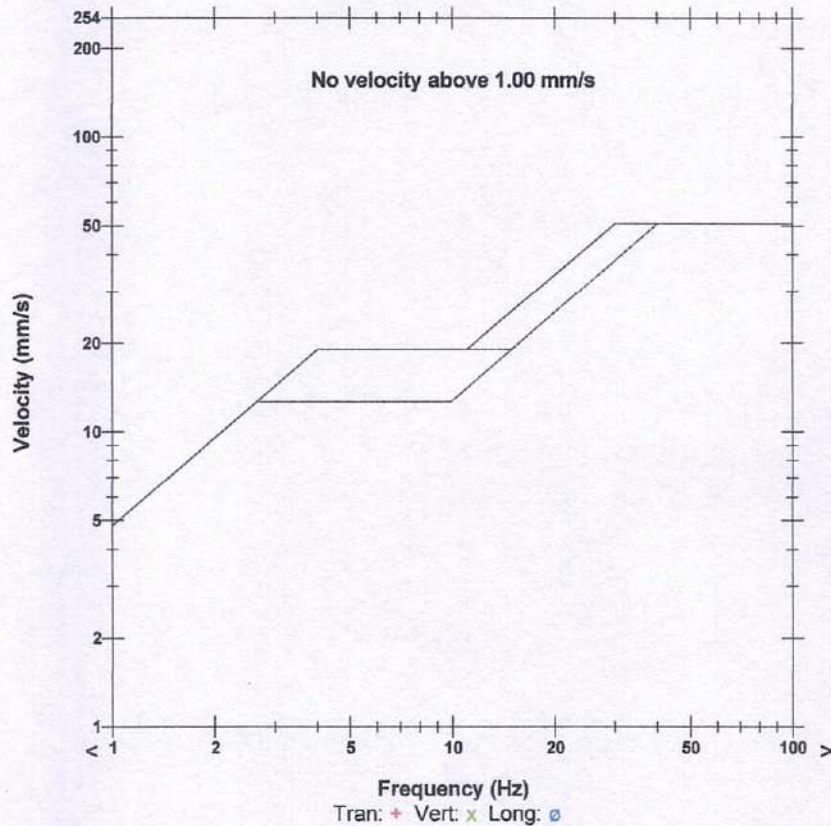
Notes
 Location: BOLANI HOSPITAL
 Client: BOLANI ORES MINES
 User Name: INDIAN OIL CORPRATION LIMITED
 General:

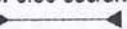
Microphone Linear Weighting
PSPL 3.072 pa.(L) at 1.824 sec
ZC Freq 4.9 Hz
Channel Test Passed (Freq = 19.7 Hz Amp = 1177 mv)

	Tran	Vert	Long	
PPV	0.315	0.512	0.481	mm/s
ZC Freq	4.0	3.1	3.0	Hz
Time (Rel. to Trig)	1.191	1.509	1.595	sec
Peak Acceleration	0.010	0.008	0.010	g
Peak Displacement	0.063	0.077	0.059	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.3	7.5	Hz
Overswing Ratio	4.0	4.5	3.9	

Peak Vector Sum 0.534 mm/s at 1.510 sec

USBM RI8507 And OSMRE



Time Scale: 0.50 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 1.000 pa.(L)/div
Trigger = 

Sensor Check

VIBRATION-CUM-BLAST REPORT				
SN	PARTICULARS	REMARKS		
1	Date of Blast	12.06.2025		
2	Location /Bench	D AREA BOLANI		
3	Hole Dia (mm)	100 mm		
4	No. of Holes	60		
5	Bench height (m)	5		
	Drilling Parameters			
6	Avg. Depth of the hole (m)	4.7		
7	Spacing (m)	2.5		
8	Burden (m)	2.0		
9	Block Volume (m3)	1410		
11	Type of Initiators	NONEL		
12	Average Explosive Charge per hole (Kg)	20.98		
13	Maximum Explosives Charge per Delay (Kg)	25.15		
14	Total Primer used (Kg)	9.00		
15	Total Bulk Explosives (Kg)	1250.00		
16	Total Explosive used	1259.00		
	VIBRATION MEASUREMENT:			
17	Distance of Vibration M/c from Blast Site	Approx 773.8 m from Blast face		
18	Maxi. PPV at Orthogonal Directions (mm/sec.)	T	V	L
		0.701	0.631	0.788
19	Corresponding Frequency (Hz)	3.9	7.5	2.8
20	Peak Vector Sum	0.892 mm/sec at 130.220 sec		
	POST BLAST OBSERVATION			
21	Fragmentation	Good		
22	Fly Rock	Nil		
23	Muck Profile	As required		


 For, Indian Oil Corporation Limited
Manish Kumar
 Asst. Manager, MKTG
 Indian Oil Corporation Limited
 Bulk Expl. Support Plant, Bolani-758037
 Dist-Keonjhar (Odisha)


 Blasting I/C
 BOM, RSP, SAIL
Sandeep Kumar
 DGM (Mining)
 BOM-SAIL-RSP

Date/Time Vert at 11:44:18 June 12, 2025
Trigger Source Geo: 0.150 mm/s, Mic: 2.000 pa.(L)
Range Geo: 254.0 mm/s
Record Time 138.0 sec (Auto=5Sec) at 2048 sps
Operator/Setup: Operator/IOCL GVR.MMB

Serial Number UM16986 V 10-89 Micromate ISEE
Battery Level 3.7 Volts
Unit Calibration December 30, 2024 by UES New Delhi
File Name __TEMP.EVT

GPS Location **Latitude** **Longitude**
 Source: 022 7.517 N 085 19.999 E
 Sensor1: 022 7.146 N 085 20.206 E
 Distance: 773.8 m

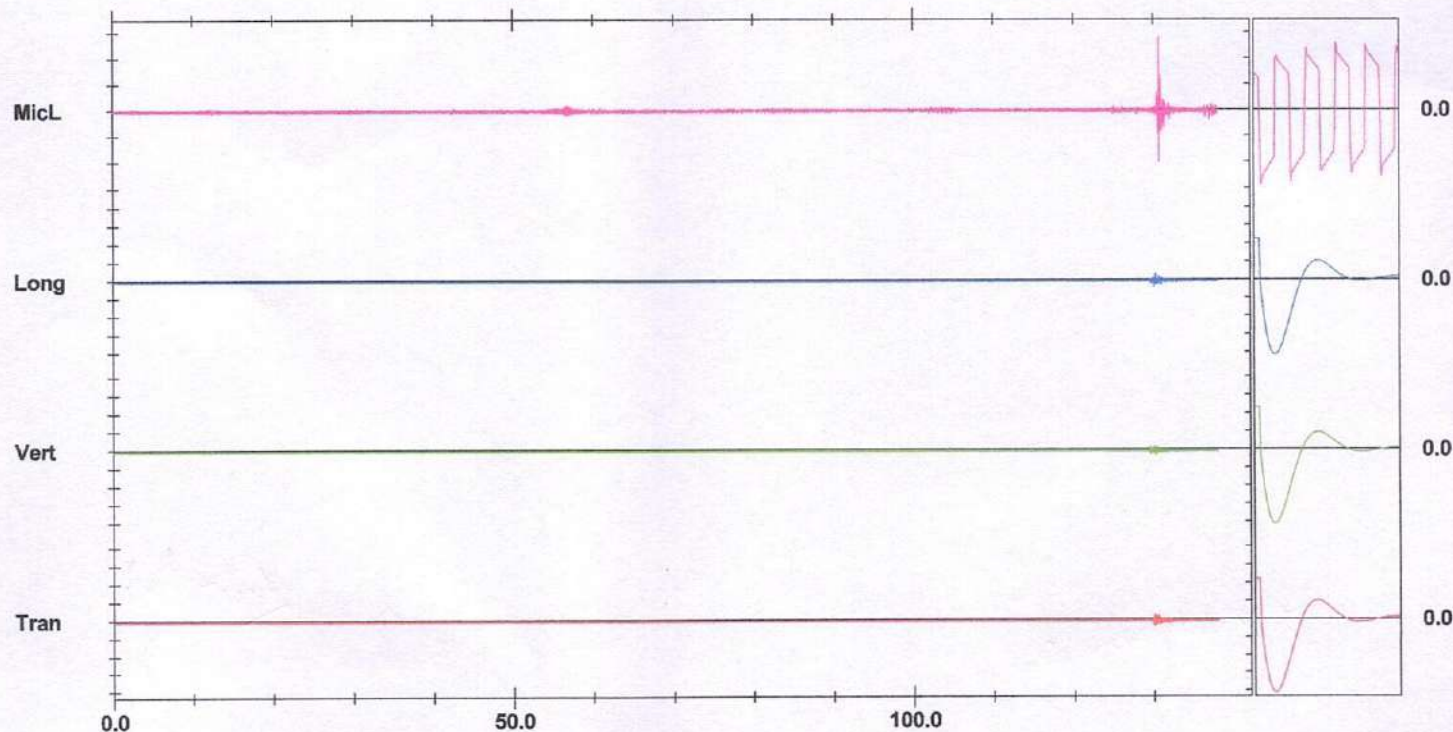
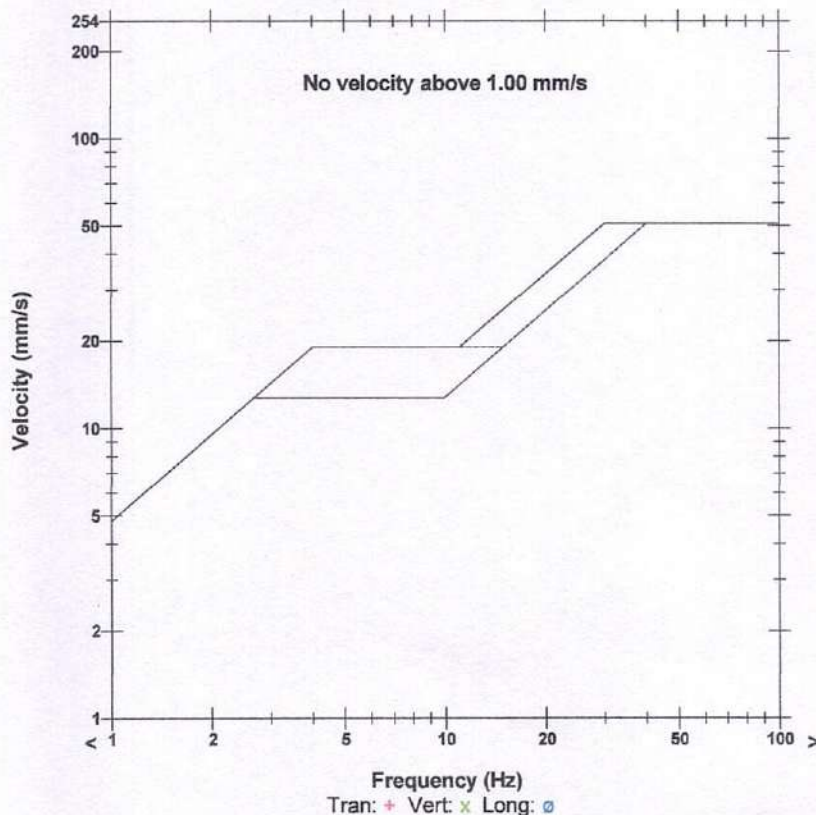
Notes
 Location: DAV PUBLIC SCHOOL
 Client: BOLANI ORES MINES
 User Name: INDIAN OIL CORPRATION LIMITED
 General:

Microphone Linear Weighting
PSPL 5.570 pa.(L) at 130.746 sec
ZC Freq 11.6 Hz
Channel Test Passed (Freq = 19.7 Hz Amp = 1148 mv)

	Tran	Vert	Long	
PPV	0.701	0.631	0.788	mm/s
ZC Freq	3.9	7.5	2.8	Hz
Time (Rel. to Trig)	129.969	130.320	130.063	sec
Peak Acceleration	0.012	0.015	0.013	g
Peak Displacement	9.604	11.35	10.34	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.3	7.3	Hz
Overswing Ratio	3.9	4.4	3.9	

Peak Vector Sum 0.892 mm/s at 130.220 sec

USBM RI8507 And OSMRE

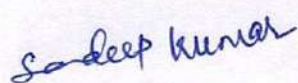


Time Scale: 10.00 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 2.000 pa.(L)/div

Sensor Check

VIBRATION-CUM-BLAST REPORT						
SN	PARTICULARS	REMARKS				
1	Date of Blast	12.06.2025				
2	Location /Bench	PANPOSH AREA BOLANI				
3	Hole Dia (mm)	100 mm				
4	No. of Holes	30				
5	Bench height (m)	5				
	Drilling Parameters					
6	Avg. Depth of the hole (m)	4.76				
7	Spacing (m)	2.5				
8	Burden (m)	2				
9	Block Volume (m3)	714				
11	Type of Initiators	NONEL				
12	Average Explosive Charge per hole (Kg)	24.15				
13	Maximum Explosives Charge per Delay (Kg)	25.15				
14	Total Primer used (Kg)	4.50				
15	Total Bulk Explosives (Kg)	720.00				
16	Total Explosive used	724.50				
	VIBRATION MEASUREMENT:					
17	Distance of Vibration M/c from Blast Site	Approx 846.4 m from Blast face				
18	Max. PPV at Orthogonal Directions (mm/sec.)	T	V	L		
		0.378	0.434	0.520		
19	Corresponding Frequency (Hz)	5.1	4.8	3.0		
20	Peak Vector Sum	0.582 mm/sec at 0.784 sec				
	POST BLAST OBSERVATION					
21	Fragmentation	Good				
22	Fly Rock	Nil				
23	Muck Profile	As required				


 For, Indian Oil Corporation Limited
Manish Kumar
 Asst. Manager, MKTG
 Indian Oil Corporation Limited
 Bulk Expl. Support Plant, Bolani-758037
 Dist-Keonjhar (Odisha)


Blasting I/C
 BOM, RSP, SAIL
 Sandeep Kumar
 DGM (Mining)
 BOM-SAIL-RSP

Date/Time Vert at 12:58:37 June 12, 2025
Trigger Source Geo: 0.150 mm/s, Mic: 2.000 pa.(L)
Range Geo: 254.0 mm/s
Record Time 9.5 sec (Auto=5Sec) at 2048 sps
Operator/Setup: Operator/IOCL GVR.MMB

Serial Number UM16986 V 10-89 Micromate ISEE
Battery Level 3.7 Volts
Unit Calibration December 30, 2024 by UES New Delhi
File Name __TEMP.EVT

GPS Location **Latitude** **Longitude**
 Source: 022 6.798 N 085 19.427 E
 Sensor1: 022 6.609 N 085 19.876 E
 Distance: 846.4 m

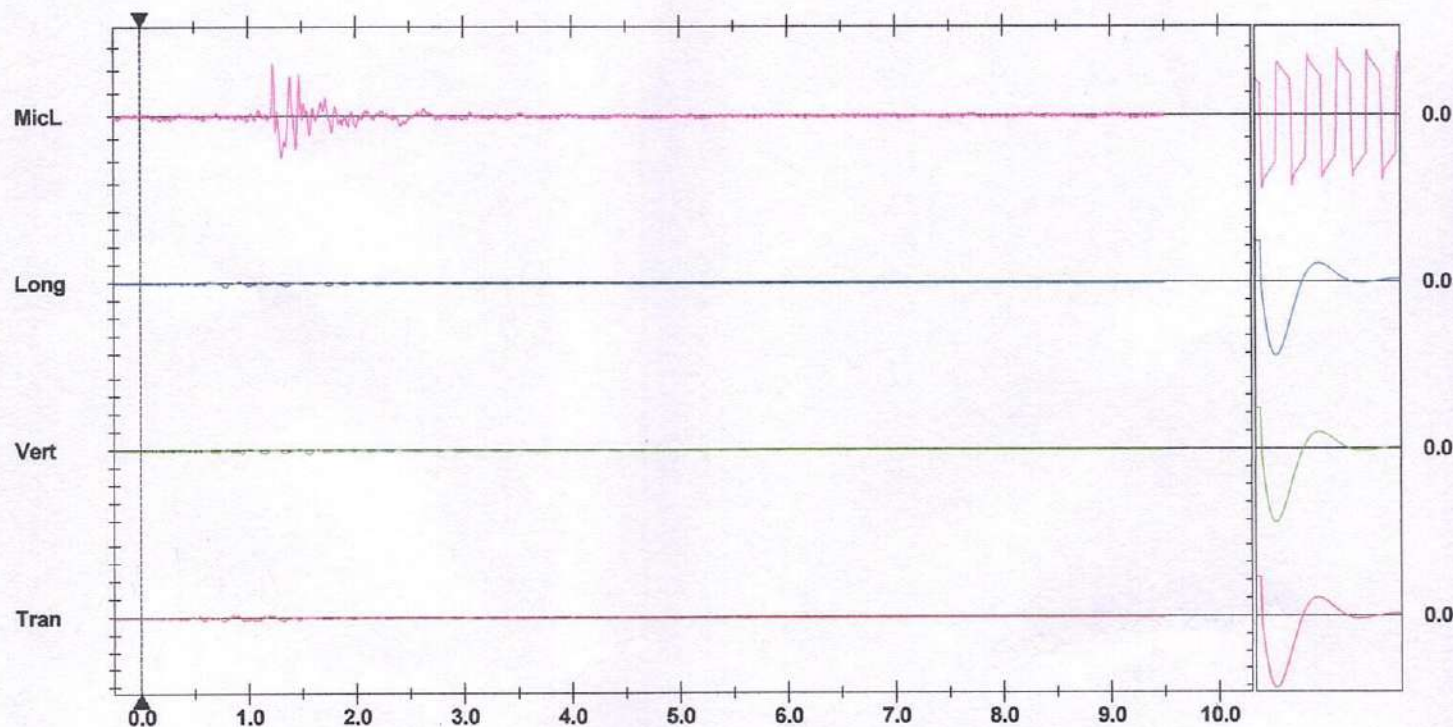
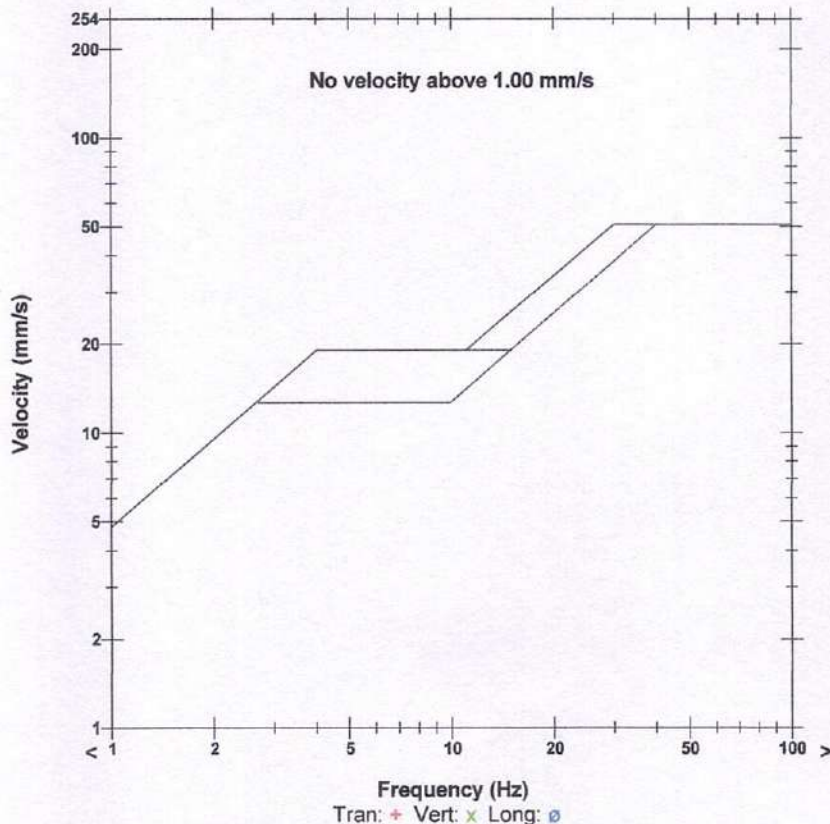
Notes
 Location: LAXMI MANDAP
 Client: BOLANI ORES MINES
 User Name: INDIAN OIL CORPRATION LIMITED
 General:

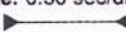
Microphone Linear Weighting
PSPL 2.312 pa.(L) at 1.231 sec
ZC Freq 13.8 Hz
Channel Test Passed (Freq = 19.7 Hz Amp = 1172 mv)

	Tran	Vert	Long	
PPV	0.378	0.434	0.520	mm/s
ZC Freq	5.1	4.8	3.0	Hz
Time (Rel. to Trig)	0.764	1.563	0.787	sec
Peak Acceleration	0.010	0.010	0.010	g
Peak Displacement	0.041	0.040	0.034	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.3	7.3	Hz
Overswing Ratio	4.0	4.5	4.0	

Peak Vector Sum 0.582 mm/s at 0.784 sec

USBM RI8507 And OSMRE



Time Scale: 0.50 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 1.000 pa.(L)/div
Trigger = 

ANNEXURE-IV

**VEHICULAR EMISSIONS
PUC- CERTIFICATE**

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

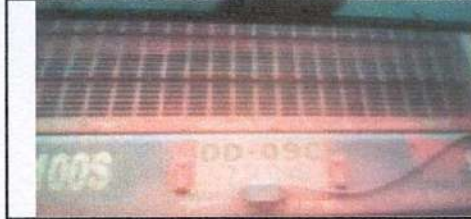
Authorised By :
Government of Odisha

Date : 13/08/2025
Time : 09:15:30 AM
Validity upto : 12/02/2026



Certificate SL. No. : OR01400020015934
Registration No. : OD09C7704
Date of Registration : 31/Dec/2016
Month & Year of Manufacturing : January-2015
Valid Mobile Number : *****0993
Emission Norms : BHARAT STAGE III
Fuel : DIESEL
PUC Code : OR0140002
GSTIN : 21ENXPS7063H1ZC
Fees : Rs.177.00(Including GST)
MIL observation : No

Vehicle Photo with Registration plate
60 mm x 30 mm



Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	0.29

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to <https://puc.parivahan.gov.in>

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date : 13/08/2025
Time : 09:11:13 AM
Validity upto : 12/02/2026



Certificate SL. No. : OR01400020015933
Registration No. : OD09C7705
Date of Registration : 31/Dec/2016
Month & Year of Manufacturing : January-2015
Valid Mobile Number : *****0993
Emission Norms : BHARAT STAGE III
Fuel : DIESEL
PUC Code : OR0140002
GSTIN : 21ENXPS7063H1ZC
Fees : Rs.177.00(Including GST)
MIL observation : No

Vehicle Photo with Registration plate
60 mm x 30 mm



Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	0.29

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to <https://puc.parivahan.gov.in>

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date : 13/08/2025
Time : 09:08:23 AM
Validity upto : 12/02/2026



Certificate SL. No. : OR01400020015932
Registration No. : OD09C0671
Date of Registration : 28/Aug/2015
Month & Year of Manufacturing : March-2015
Valid Mobile Number : *****0993
Emission Norms : BHARAT STAGE III
Fuel : DIESEL
PUC Code : OR0140002
GSTIN : 21ENXPS7063H1ZC
Fees : Rs.177.00(Including GST)
MIL observation : No

Vehicle Photo with Registration plate
60 mm x 30 mm



Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	0.28

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to <https://puc.parivahan.gov.in>

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

MOTOR GRADER

13-Aug-2025

13-Feb-26

68.0



RTA/RKL/POLL/02/2016

COMPUTERISED EMISSION TEST CERTIFICATE

AUTHORISED BY GOVT. OF ODISHA

CMVR

SAI POLLUTION TESTING CENTER AT/- KOIRA, DIST-SUNDARGARH
STATE-ODISHA, PIN-770048

I.D. Number: ORDP004062

Year Of Registration :

Licence No : RTA/RKL/POLL/02/2016

Vehicle Registration No: MOTOR GRADER

Date : 13-Aug-2025

Speedometer Reading (Kms) : 0

Time : 05:37:14 PM

Owner : BOLANI ORE MINES SAIL

Test Fee : 500/-

Vehicle Make : BEML

Smk Cell Temp : 66

Oil Temp : 67.C

Vehicle Model : BG825

Valid Up To: 13-Feb-26

Machine serial No : BG825-25209

Grade :

Type Of Vehide : Others

Test Station Code : 000

Validity : 6 Month

Test Results: Free Acceieration

No Of K	Kval	Min Rpm	Max Rpm	Interval	Oil Temp	Test Time
1	0.10	124	1421	5.2	73.0	01:12:45 PM
2	0.11	143	1442	5.3	73.0	01:23:55 PM
3	0.12	167	1466	5.1	73.0	01:25:45 PM
4	0.13	185	1484	5.4	73.0	01:27:45 PM
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-

**Certified that this vehicle's K-mean and HSU% Value Confirms to the standards
Prescribed under Rule 115 (2) of CMV Rules 1989, the certificate is valid for 6 months**

Name of Authorised Signatory with Signature

Seal of Testing Center

DUMPER

16-Aug-2025

16-Feb-26

68.0



RTA/RKL/POLL/02/2016

COMPUTERISED EMISSION TEST CERTIFICATE

AUTHORISED BY GOVT. OF ODISHA

CMVR

SAI POLLUTION TESTING CENTER AT/- KOIRA, DIST-SUNDARGARH
STATE-ODISHA, PIN-770048

I.D. Number: ORDP004062

Year Of Registration :

Licence No : RTA/RKL/POLL/02/2016

Vehicle Registration No: DUMPER

Date : 16-Aug-2025

Speedometer Reading (Kms) : 0



Vehicle Make : KOMATASU

Vehicle Model : HD-785-7

Machine serial No : 4681F81N

Type Of Vehicle : Others

Test Station Code : 000

Test Results: Free Acceleration

Time : 05:37:14 PM

Owner : BOLANI ORE MINES SAIL

Test Fee : 500/-

Smk Cell Temp : 66

Oil Temp : 67.C

Valid Up To: 16-Feb-26

Grade :

Validity : 6 Month

No Of K	Kval	Min Rpm	Max Rpm	Interval	Oil Temp	Test Time
1	0.10	124	1421	5.2	73.0	01:12:45 PM
2	0.11	143	1442	5.3	73.0	01:23:55 PM
3	0.12	167	1466	5.1	73.0	01:25:45 PM
4	0.13	185	1484	5.4	73.0	01:27:45 PM
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-

**Certified that this vehicle's K-mean and HSU% Value Confirms to the standards
Prescribed under Rule 115 (2) of CMV Rules 1989, the certificate is valid for 6 months**

Name of Authorised Signatory with Signature

Seal of Testing Center

DUMPER

16-Aug-2025

16-Feb-26

68.0



RTA/RKL/POLL/02/2016

COMPUTERISED EMISSION TEST CERTIFICATE

AUTHORISED BY GOVT. OF ODISHA

CMVR

SAI POLLUTION TESTING CENTER AT/- KOIRA, DIST-SUNDARGARH
STATE-ODISHA, PIN-770048

I.D. Number: ORDP004062

Year Of Registration :

Licence No : RTA/RKL/POLL/02/2016

Vehicle Registration No: DUMPER HP-34

Date : 16-Aug-2025

Speedometer Reading (Kms) : 0

Time : 05:37:14 PM

Owner : BOLANI ORE MINES SAIL

Test Fee : 500/-

Vehicle Make : KOMATASU

Smk Cell Temp : 66

Oil Temp : 67.0

Vehicle Model : HD-785-7

Valid Up To: 16-Feb-26

Machine serial No : Z15614681F81N

Grade : 

Type Of Vehicle : Others

Test Station Code : 000

Validity : 6 Month

Test Results: Free Acceliration

No Of K	Kval	Min Rpm	Max Rpm	Interval	Oil Temp	Test Time
1	0.10	124	1421	5.2	73.0	01:12:45 PM
2	0.11	143	1442	5.3	73.0	01:23:55 PM
3	0.12	167	1466	5.1	73.0	01:25:45 PM
4	0.13	185	1484	5.4	73.0	01:27:45 PM
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-

**Certified that this vehicle's K-mean and HSU% Value Confirms to the standards
Prescribed under Rule 115 (2) of CMV Rules 1989, the certificate is valid for 6 months**

Name of Authorised Signatory with Signature

Seal of Testing Center

DUMPER

16-Aug-2025

16-Feb-26

68.0



RTA/RKL/POLL/02/2016

COMPUTERISED EMISSION TEST CERTIFICATE

AUTHORISED BY GOVT. OF ODISHA

CMVR

SAI POLLUTION TESTING CENTER AT/- KOIRA, DIST-SUNDARGARH
STATE-ODISHA, PIN-770048

I.D. Number: ORDP004062

Year Of Registration :

Licence No : RTA/RKL/POLL/02/2016

Vehicle Registration No: DUMPER HP-37

Date : 16-Aug-2025

Speedometer Reading (Kms) : 0

Time : 05:37:14 PM

Owner : BOLANI ORE MINES SAIL

Test Fee : 500/-

Vehicle Make : CAT

Smk Cell Temp : 66

Oil Temp : 67.0

Vehicle Model : 777 D

Valid Up To: 16-Feb-26

Machine serial No : FKR01260

Grade :

Type Of Vehicle : Others

Test Station Code : 000

Validity : 6 Month

Test Results: Free Acceleration

No Of K	Kval	Min Rpm	Max Rpm	Interval	Oil Temp	Test Time
1	0.10	124	1421	5.2	73.0	01:12:45 PM
2	0.11	143	1442	5.3	73.0	01:23:55 PM
3	0.12	167	1466	5.1	73.0	01:25:45 PM
4	0.13	185	1484	5.4	73.0	01:27:45 PM
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-

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Prescribed under Rule 115 (2) of CMV Rules 1989, the certificate is valid for 6 months**

Name of Authorised Signatory with Signature

Seal of Testing Center

DUMPER

16-Aug-2025

16-Feb-26

68.0



RTA/RKL/POLL/02/2016

COMPUTERISED EMISSION TEST CERTIFICATE

AUTHORISED BY GOVT. OF ODISHA

CMVR

SAI POLLUTION TESTING CENTER AT/- KOIRA, DIST-SUNDARGARH
STATE-ODISHA, PIN-770048

I.D. Number: ORDP004062

Year Of Registration :

Licence No : RTA/RKL/POLL/02/2016

Vehicle Registration No: DUMPER HP-39

Date : 16-Aug-2025

Speedometer Reading (Kms) : 0

Time : 05:37:14 PM

Owner : BOLANI ORE MINES SAIL

Test Fee : 500/-

Vehicle Make : BEML

Smk Cell Temp : 66

Oil Temp : 67.0

Vehicle Model : BH100S

Valid Up To: 16-Feb-26

Machine serial No : 90117

Grade :

Type Of Vehicle : Others

Test Station Code : 000

Validity : 6 Month

Test Results: Free Accoeriation

No Of K	Kval	Min Rpm	Max Rpm	Interval	Oil Temp	Test Time
1	0.10	124	1421	5.2	73.0	01:12:45 PM
2	0.11	143	1442	5.3	73.0	01:23:55 PM
3	0.12	167	1466	5.1	73.0	01:25:45 PM
4	0.13	185	1484	5.4	73.0	01:27:45 PM
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-

**Certified that this vehicle's K-mean and HSU% Value Confirms to the standards
Prescribed under Rule 115 (2) of CMV Rules 1989, the certificate is valid for 6 months**

Name of Authorised Signatory with Signature

Seal of Testing Center

DUMPER

16-Aug-2025

16-Feb-26

68.0



RTA/RKL/POLL/02/2016

COMPUTERISED EMISSION TEST CERTIFICATE

AUTHORISED BY GOVT. OF ODISHA

CMVR

SAI POLLUTION TESTING CENTER AT/- KOIRA, DIST-SUNDARGARH
STATE-ODISHA, PIN-770048

I.D. Number: ORDP004062

Year Of Registration :

Licence No : RTA/RKL/POLL/02/2016

Vehicle Registration No: DUMPER HP-41

Date : 16-Aug-2025

Speedometer Reading (Kms) : 0

Time : 05:37:14 PM

Owner : BOLANI ORE MINES SAIL

Test Fee : 500/-

Vehicle Make : CAT

Smk Cell Temp : 66

Oil Temp : 67.0

Vehicle Model : CAT 777

Valid Up To: 16-Feb-26

Machine serial No : 7W803295

Grade :

Type Of Vehicle : Others

Test Station Code : 000

Validity : 6 Month

Test Results: Free Acceleration

No Of K	Kval	Min Rpm	Max Rpm	Interval	Oil Temp	Test Time
1	0.10	124	1421	5.2	73.0	01:12:45 PM
2	0.11	143	1442	5.3	73.0	01:23:55 PM
3	0.12	167	1466	5.1	73.0	01:25:45 PM
4	0.13	185	1484	5.4	73.0	01:27:45 PM
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-

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Prescribed under Rule 115 (2) of CMV Rules 1989, the certificate is valid for 6 months**

Name of Authorised Signatory with Signature

Seal of Testing Center

DUMPER

16-Aug-2025

16-Feb-26

68.0



RTA/RKL/POLL/02/2016

COMPUTERISED EMISSION TEST CERTIFICATE

AUTHORISED BY GOVT. OF ODISHA

CMVR

SAI POLLUTION TESTING CENTER AT/- KOIRA, DIST-SUNDARGARH
STATE-ODISHA, PIN-770048

I.D. Number: ORDP004062

Year Of Registration :

Licence No : RTA/RKL/POLL/02/2016

Vehicle Registration No: DUMPER HP-42

Date : 16-Aug-2025

Speedometer Reading (Kms) : 0

Time : 05:37:14 PM

Owner : BOLANI ORE MINES SAIL

Test Fee : 500/-

Vehicle Make : CAT

Smk Cell Temp : 66

Oil Temp : 67.0

Vehicle Model : CAT 777

Valid Up To: 16-Feb-26

Machine serial No : 7E804003

Grade : 

Type Of Vehicle : Others

Test Station Code : 000

Validity : 6 Month

Test Results: Free Accoeriation

No Of K	Kval	Min Rpm	Max Rpm	Interval	Oil Temp	Test Time
1	0.10	124	1421	5.2	73.0	01:12:45 PM
2	0.11	143	1442	5.3	73.0	01:23:55 PM
3	0.12	167	1466	5.1	73.0	01:25:45 PM
4	0.13	185	1484	5.4	73.0	01:27:45 PM
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-

**Certified that this vehicle's K-mean and HSU% Value Confirms to the standards
Prescribed under Rule 115 (2) of CMV Rules 1989, the certificate is valid for 6 months**

Name of Authorised Signatory with Signature

Seal of Testing Center

DUMPER

16-Aug-2025

16-Feb-26

68.0



RTA/RKL/POLL/02/2016

COMPUTERISED EMISSION TEST CERTIFICATE

AUTHORISED BY GOVT. OF ODISHA

CMVR

SAI POLLUTION TESTING CENTER AT/- KOIRA,DIST-SUNDARGARH
STATE-ODISHA,PIN-770048

I.D. Number: ORDP004062

Year Of Registration :

Licence No : RTA/RKL/POLL/02/2016

Vehicle Registration No: DUMPER HP-42A

Date : 16-Aug-2025

Speedometer Reading (Kms) : 0

Time : 05:37:14 PM

Owner : BOLANI ORE MINES SAIL

Test Fee : 500/-

Vehicle Make : CAT

Smk Cell Temp : 66

Oil Temp : 67.0

Vehicle Model : CAT 777

Valid Up To: 16-Feb-26

Machine serial No : 7E804004

Grade : 

Type Of Vehicle : Others

Test Station Code : 000

Validity : 6 Month

Test Results: Free Acceliration

No Of K	Kval	Min Rpm	Max Rpm	Interval	Oil Temp	Test Time
1	0.10	124	1421	5.2	73.0	01:12:45 PM
2	0.11	143	1442	5.3	73.0	01:23:55 PM
3	0.12	167	1466	5.1	73.0	01:25:45 PM
4	0.13	185	1484	5.4	73.0	01:27:45 PM
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-

**Certified that this vehicle's K-mean and HSU% Value Confirms to the standards
Prescribed under Rule 115 (2) of CMV Rules 1989, the certificate is valid for 6 months**

Name of Authorised Signatory with Signature

Seal of Testing Center

WATER SPRINKELR

16-Aug-2025

16-Feb-26

68.0



RTA/RKL/POLL/02/2016

COMPUTERISED EMISSION TEST CERTIFICATE

AUTHORISED BY GOVT. OF ODISHA

CMVR

SAI POLLUTION TESTING CENTER AT/- KOIRA, DIST-SUNDARGARH
STATE-ODISHA, PIN-770048

I.D. Number: ORDP004062

Year Of Registration :

Licence No : RTA/RKL/POLL/02/2016

Vehicle Registration No: WATER SPRINKELR WS-4

Date : 16-Aug-2025

Speedometer Reading (Kms) : 0

Time : 05:37:14 PM

Owner : BOLANI ORE MINES SAIL

Test Fee : 500/-

Vehicle Make : BEML

Smk Cell Temp : 66

Oil Temp : 67.0

Vehicle Model : WS28-2

Valid Up To: 16-Feb-26

Machine serial No : WS28-2-355

Grade :

Type Of Vehicle : Others

Test Station Code : 000

Validity : 6 Month

Test Results: Free Acceliration

No Of K	Kval	Min Rpm	Max Rpm	Interval	Oil Temp	Test Time
1	0.10	124	1421	5.2	73.0	01:12:45 PM
2	0.11	143	1442	5.3	73.0	01:23:55 PM
3	0.12	167	1466	5.1	73.0	01:25:45 PM
4	0.13	185	1484	5.4	73.0	01:27:45 PM
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-

**Certified that this vehicle's K-mean and HSU% Value Confirms to the standards
Prescribed under Rule 115 (2) of CMV Rules 1989, the certificate is valid for 6 months**

Name of Authorised Signatory with Signature

Seal of Testing Center

WATER SPRINKELR

16-Aug-2025

16-Feb-26

68.0



RTA/RKL/POLL/02/2016

COMPUTERISED EMISSION TEST CERTIFICATE

AUTHORISED BY GOVT. OF ODISHA

CMVR

SAI POLLUTION TESTING CENTER AT/- KOIRA, DIST-SUNDARGARH
STATE-ODISHA, PIN-770048

I.D. Number: ORDP004062

Year Of Registration :

Licence No : RTA/RKL/POLL/02/2016

Vehicle Registration No: WATER SPRINKELRWS-6

Date : 16-Aug-2025

Speedometer Reading (Kms) : 0

Time : 05:37:14 PM

Owner : BOLANI ORE MINES SAIL

Test Fee : 500/-

Vehicle Make : BEML

Smk Cell Temp : 66

Oil Temp : 67.0

Vehicle Model : WS28-2

Valid Up To: 16-Feb-26

Machine serial No : WS28-2-28302

Grade :

Type Of Vehicle : Others

Test Station Code : 000

Validity : 6 Month

Test Results: Free Acceleration

No Of K	Kval	Min Rpm	Max Rpm	Interval	Oil Temp	Test Time
1	0.10	124	1421	5.2	73.0	01:12:45 PM
2	0.11	143	1442	5.3	73.0	01:23:55 PM
3	0.12	167	1466	5.1	73.0	01:25:45 PM
4	0.13	185	1484	5.4	73.0	01:27:45 PM
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-

**Certified that this vehicle's K-mean and HSU% Value Confirms to the standards
Prescribed under Rule 115 (2) of CMV Rules 1989, the certificate is valid for 6 months**

Name of Authorised Signatory with Signature

Seal of Testing Center

LOADER

16-Aug-2025

16-Feb-26

68.0



RTA/RKL/POLL/02/2016

COMPUTERISED EMISSION TEST CERTIFICATE

AUTHORISED BY GOVT. OF ODISHA

CMVR

SAI POLLUTION TESTING CENTER AT/- KOIRA, DIST-SUNDARGARH
STATE-ODISHA, PIN-770048

I.D. Number: ORDP004062

Year Of Registration :

Licence No : RTA/RKL/POLL/02/2016

Vehicle Registration No: LOADER-24

Date : 16-Aug-2025

Speedometer Reading (Kms) : 0

Time : 05:37:14 PM

Owner : BOLANI ORE MINES SAIL

Test Fee : 500/-

Vehicle Make : TATA HITACHI

Smk Cell Temp : 66

Oil Temp : 67.0

Vehicle Model : ZW310-5A

Valid Up To: 16-Feb-26

Machine serial No : 90007-0548

Grade :

Type Of Vehicle : Others

Test Station Code : 000

Validity : 6 Month

Test Results: Free Acceleration

No Of K	Kval	Min Rpm	Max Rpm	Interval	Oil Temp	Test Time
1	0.10	124	1421	5.2	73.0	01:12:45 PM
2	0.11	143	1442	5.3	73.0	01:23:55 PM
3	0.12	167	1466	5.1	73.0	01:25:45 PM
4	0.13	185	1484	5.4	73.0	01:27:45 PM
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-

**Certified that this vehicle's K-mean and HSU% Value Confirms to the standards
Prescribed under Rule 115 (2) of CMV Rules 1989, the certificate is valid for 6 months**

Name of Authorised Signatory with Signature

Seal of Testing Center

LOADER

16-Aug-2025

16-Feb-26

68.0



RTA/RKL/POLL/02/2016

COMPUTERISED EMISSION TEST CERTIFICATE

AUTHORISED BY GOVT. OF ODISHA

CMVR

SAI POLLUTION TESTING CENTER AT/- KOIRA, DIST-SUNDARGARH
STATE-ODISHA, PIN-770048

I.D. Number: ORDP004062

Year Of Registration :

Licence No : RTA/RKL/POLL/02/2016

Vehicle Registration No: LOADER-25

Date : 16-Aug-2025

Speedometer Reading (Kms) : 0

Time : 05:37:14 PM

Owner : BOLANI ORE MINES SAIL

Test Fee : 500/-

Vehicle Make : TATA HITACHI

Smk Cell Temp : 66

Oil Temp : 67.0

Vehicle Model : ZW310-5A

Valid Up To: 16-Feb-26

Machine serial No : 90007-0765

Grade : 

Type Of Vehicle : Others

Test Station Code : 000

Validity : 6 Month

Test Results: Free Acceleration

No Of K	Kval	Min Rpm	Max Rpm	Interval	Oil Temp	Test Time
1	0.10	124	1421	5.2	73.0	01:12:45 PM
2	0.11	143	1442	5.3	73.0	01:23:55 PM
3	0.12	167	1466	5.1	73.0	01:25:45 PM
4	0.13	185	1484	5.4	73.0	01:27:45 PM
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-

**Certified that this vehicle's K-mean and HSU% Value Confirms to the standards
Prescribed under Rule 115 (2) of CMV Rules 1989, the certificate is valid for 6 months**

Name of Authorised Signatory with Signature

Seal of Testing Center

LOADER

16-Aug-2025

16-Feb-26

68.0



RTA/RKL/POLL/02/2016

COMPUTERISED EMISSION TEST CERTIFICATE

AUTHORISED BY GOVT. OF ODISHA

CMVR

SAI POLLUTION TESTING CENTER AT/- KOIRA, DIST-SUNDARGARH
STATE-ODISHA, PIN-770048

I.D. Number: ORDP004062

Year Of Registration :

Licence No : RTA/RKL/POLL/02/2016

Vehicle Registration No: LOADER-26

Date : 16-Aug-2025

Speedometer Reading (Kms) : 0

Time : 05:37:14 PM

Owner : BOLANI ORE MINES SAIL

Test Fee : 500/-

Vehicle Make : TATA HITACHI

Smk Cell Temp : 66

Oil Temp : 67.0

Vehicle Model : ZW310-5A

Valid Up To: 16-Feb-26

Machine serial No : 90007-0766

Grade : 

Type Of Vehicle : Others

Test Station Code : 000

Validity : 6 Month

Test Results: Free Acceleration

No Of K	Kval	Min Rpm	Max Rpm	Interval	Oil Temp	Test Time
1	0.10	124	1421	5.2	73.0	01:12:45 PM
2	0.11	143	1442	5.3	73.0	01:23:55 PM
3	0.12	167	1466	5.1	73.0	01:25:45 PM
4	0.13	185	1484	5.4	73.0	01:27:45 PM
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-

**Certified that this vehicle's K-mean and HSU% Value Confirms to the standards
Prescribed under Rule 115 (2) of CMV Rules 1989, the certificate is valid for 6 months**

Name of Authorised Signatory with Signature

Seal of Testing Center

ANNEXURE-V

**ENVIRONMENTAL
STATEMENT**



स्टील अथॉरिटी ऑफ इंडिया लिमिटेड
STEEL AUTHORITY OF INDIA LIMITED
राउरकेला इस्पात संयंत्र
ROURKELA STEEL PLANT
बोलानी अयस्क खदान
BOLANI ORES MINES

Letter No. : CGM/B-1258

Date : 27/09/2025

To

The Member Secretary,
State Pollution Control Board,
Paribesh Bhawan, A/118, Nilkantha Nagar, Unit – VIII,
Bhubaneswar – 751 012, Odisha

Sub: Submission of Environmental Statements of both 5.10 sq. miles ML & 6.90 sq. miles ML of Bolani Ores Mines for the year 2024-25

Sir,

Please find enclosed herewith the Annual Environmental Statements of Bolani Iron Ore Mines (5.10 sq. miles ML) & Bolani Manganese & Iron Ore Mines (6.90 sq. miles ML) of Bolani Ores Mines, M/s SAIL for the period of Apr'24 to Mar'25, duly filled in Form-V as per the prescribed format of SPCB, Odisha. The report also contains the updated status of environmental monitoring reports pertaining to the above period.

Thanking you,

Yours Faithfully,

Chief General Manager (Mines)

Bolani Ores Mines, CMLO, M/s SAIL

मल्ला श्रीनिवासु / Malla Srinivasu

मुख्य महाप्रबंधक (खान) / Chief General Manager (Mines)

सेल-आर. एच. पी - बोलानी अयस्क खदान

SAIL-RSP-Bolani Ores Mines

बोलानी-758037 ब्लॉक, ओडिशा

Bolani-758037, Keonjhar, Odisha

Encls. : As Above

Copy to:

(1) Regional Officer, State Pollution Control Board, Keonjhar

ENVIRONMENTAL STATEMENTS

FORM-V

(See Rule 14)

Environmental Statement for the financial year ending the 31st March 2025

PART-A

(i) Name and address of the owner / occupier of the industry operation or process:

Bolani Manganese & Iron Ore Mines(6.90 sq. miles ML)

Bolani Ores Mines

P.O- Bolani,

Dist.: Keonjhar

Pin- 758037, Odisha

Occupier: Bolani Ores Mines, CMLO, M/s SAIL

Agent: Shri Malla Srinivasu

Chief General Manager (Mines), CMLO, BOM

Nominated Owner: Shri Manish Raj Gupta,
Director for Technical, Projects & Raw Materials, SAIL

(ii) Industry category Primary – (STC code) : Open Cast Manganese & Iron Ore Mine
/Secondary – (SIC Code)

(iii) Production capacity: 15000 TPA Manganese Ore.

(iv) Year of establishment: 1962

(v) Date of the last environmental statement submitted: 26.09.2024

PART-B Water and Raw Material Consumption

(i) Water consumption m3/d

Process: NIL

Cooling: NIL

Domestic: The details of domestic consumption included in the Env. Statement of adjoining 5.10 sq. mile ML

Name of Product	Process water consumption per unit of product output		
	During the previous financial year	During the current financial year	
1	2	3	
Washed Iron Ore	NIL	NIL	
(ii)	Raw material consumption		
Name of raw material	Name of products	Consumption of raw material per unit of output	
		During the previous financial year(2023-2024)	During the current financial Year(2024-2025)
Diesel	-	311357 Ltrs	0
Lubricants	-	15432 Ltrs	0
Explosives	-	-	-
Electricity	-	2218442 Kwh	2362848 Kwh
Gas	-	789 Cum	0
Grease	-	2707 Kg	0

(Polluting Industry may use codes if disclosing details of raw material would violate contractual obligations, otherwise all industries have to name the raw material used.)

PART-C

Discharged to environment / unit of output specified if the consent issued.

Pollutants	Quantity (mass/day)	Concentration of pollutions in discharges (mass / volume)	Percentage of variation from prescribed standards with
(General standards of Environmental Pollutant as per CTO)			
(a) Water : No workshop is in this Mining Lease			
(b) Air			
Location :- Bolani Community Center			
PM10	-	62.34	100 µg/m3
PM2.5	-	22.42	60 µg/m3
SO ₂	-	16.96	80 µg/m3
NO _x	-	17.77	80 µg/m3
CO	-	0.58	04 mg/m3
Location :- DAV Public school			
PM10	-	60.73	100 µg/m3
PM2.5	-	22.20	60 µg/m3
SO ₂	-	16.95	80 µg/m3
NO _x	-	17.08	80 µg/m3
CO	-	0.57	04 mg/m3
Location :- Main gate			
PM10	-	64.40	100 µg/m3
PM2.5	-	24.14	60 µg/m3
SO ₂	-	17.10	80 µg/m3
NO _x	-	17.75	80 µg/m3
CO	-	0.59	04 mg/m3
Location :- Bolani Mines Office Complex			
PM10	-	61.90	100 µg/m3
PM2.5	-	23.08	60 µg/m3
SO ₂	-	17.14	80 µg/m3
NO _x	-	15.90	80 µg/m3
CO	-	0.55	04 mg/m3
Location :- Nimtur Village			
PM10	-	52.61	100 µg/m3
PM2.5	-	19.68	60 µg/m3
Location :- Karo Guest House			
PM10	-	52.56	100 µg/m3
PM2.5	-	19.81	60 µg/m3

PART-D**HAZARDOUS WASTAGES**

(As specified under Hazardous Wastes / Management and handling Rules, 1989)

Hazardous Waste	Total Quantity (Kg)	
	During the previous financial year(2023-2024)	During the current financial Year(2024-2025)
(a) From process	Nil*	Nil*
(b) From pollution control facilities	Nil*	Nil*

PART-E**Solid Waste**

		Total Quantity	
		During the previous financial year	During the current financial year
	From process		
(a)	(1) Overburden / rejects	4285.60	NIL
	(2) Ore washing slimes		
(b)	From pollution control facility	NIL	NIL
(c)	(1) Quantity recycled or re-utilized within the unit		
	(2) Sold		
	(3) Disposed	Disposed	Disposed

PART-F

Please specify the characterization (in terms of composition and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both the categories of wastes.

No Hazardous waste generated during 2024-25 as there is no vehicle maintenance workshop in this ML.

PART-G

In respect of the pollution abatement measures taken up on conservation of natural resources and on the cost of production.

Impact of pollution control measures on conservation of natural resources and consequently on the cost of production.

1. Systematic and procedural mining operations are carried out.
2. Strict Blending Norms to cater to the needs of Steel Plants are in place for optimal utilization of low-grade Ore.
3. Separate storage of Sub-grade Mineral for later utilization.
4. Extensive Geological mapping and updating Resource/reserve charts by conducting regular Exploration programs.
6. Mineral Conservation Awareness classes are conducted on regular basis at Mines Vocational Training Centre, Bolani.
7. Checkdams and Settling ponds are built across the nallah courses to mitigate the silt flow.
8. Plantation had been undertaken within ML area for carbon sequestration, Soil erosion control and trapping airborne dust.
9. Plantation of saplings more than the targeted quantity has been taken up during 2024-25. Seedling planted- 15000 in 10.0 Ha areas.

PART-H

Additional measures/investment proposal for environment protection including abatement of pollution prevention of pollution.

Environmental Protection Measures undertaken for abatement of pollution.

SL. No	ISSUES	POLLUTION ABATEMENT MEASURES
	Top soil preservation & utilization	No topsoil generated during 2024-25.

	Reclamation of Mined out Land	Mineral Deposits have not been exhausted beyond the Cut-off point. No Backfilling undertaken in 2024-25.
	OB/Fines Dump rehabilitation	All the OB Dumps were active during 2024-25. Hence rehabilitation through plantation of any OB dump could not be done during 2024-25.
	Management of Run off from Dump areas	Necessary retaining walls with garland drains directed to settling pits have been provided for the ore stockpile at loading plant area.
	Air quality Management	<ul style="list-style-type: none"> i. Job for installation of Dry Fog Dust Suppression system covering the entire loading plant including the stockpiles with a financial outlay of Rs.1.38 cores has been completed. ii. 02 nos. of 09 KL mobile sprinklers are used to control fugitive emissions near Loading Plant and Fines handling site. iii. High Pressure Fixed sprinklers installed at Feed hopper of 600 TPH plant. iv. Fixed water sprinklers are installed near 600TPH stock Yard, along the 600TPH plant and Panposh haul road. v. Wheel washing system with concrete road has been provided at the exit gate of fines handling area.
	Water Quality Management	The domestic effluent generated from the township within the ML area is directed to soak pits via intermediate septic tanks.
	Hazardous Waste management	No Hazardous Waste Generated during 2024-25.
	Noise	<ul style="list-style-type: none"> (i) Plantation has been done around Loading plant and 600TPH plant to act as Noise Barriers (ii) Audiometric tests of all the employees conducted as a part of Personal Medical Examination (PME) indicates no abnormality. (iii) Provision of ear plugs to workers posted at high noise level sites. (iv) Regular maintenance of HEMMs .
	Ground Vibration	No blasting was carried out in 2024-25
	Forest Fire Prevention	10 nos. of forest watchers have been engaged for Forest fire prevention by fire line creation and maintenance during the months of Jan'25-July'25 at a cost of Rs.15.39 lakhs.
	Environmental Monitoring	<p>AAQ, Fugitive Dust and Water Quality monitoring at Bolani Ores Mines were outsourced to M/s Ecomen Mining Pvt. Ltd., a NABL accredited laboratory, in conformance with the stipulations in EC and CTO.</p> <p>04(four) nos. of CAAQMS stations were installed at a cost of Rs.1.75 (approx.) crores as per the directive of MS, SPCB and stipulation in CTO grant order.</p>
	Scientific Studies	A Biological Study to identify and preserve orchids within both the leases of BOM has been conducted and the report has been submitted to MoEF&CC vide no. BOM/ENV/HD-1707A Dt.17.07.2019 for technical approval of the said report.
	Wild Life conservation	Necessary biological surveys were conducted by expert committees and Wild Life Experts and based on the same, Site Specific Wildlife Conservation Plan has been prepared and approved by the state Forest and Wildlife Department vide order no 10680/1WL-FC-Mrl-SSP-

		228/2018 Dt. 22.11.2018 with a total financial outlay of Rs.1088.431 lakhs. An amount of Rs.772.999 lakhs has already been deposited in CAMPA account of Forest Dept. for interventions in Project impact area.
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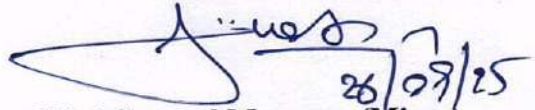
PART-I

Any other particular for improving the quality of the environment.

Additional environment protection and abatement of pollution measures undertaken in 2024-25:

1. Creating awareness amongst employees and public regarding protection of environment by observing International Day of Forest, Vana Mahotsav week, Water Day, Earth Day, Campaign of Single Use Plastic, World Environment day and Mines Environment & Mineral Conservation week.
2. Display of Boards carrying environmental slogans. LED display boards for displaying environment monitoring data & environment care at main gate of Mines.
3. Celebration for Mass awareness by slogans, working models & Cultural Program by employees & school children in Mines Environment & Mineral Conservation week under the aegis of IBM.
4. Free distribution of over 7000 fruit bearing saplings developed in house Nursery of BOM, to local dwellers till date during 2024-25.
5. Environmental Management Cell and Sustainable Development Unit constituted that operate directly under the unit head, i.e., Chief General Manager, BOM.
6. An Expenditure of Rs. 429.12 lakhs has been made for various Environmental management and related activities in 2024-25.

Date: 26/09/2025


Chief General Manager (Mines)
Bolani Ores Mines, CMLO, M/s SAIL

मल्ला श्रीनिवासु / Malla Srinivasu
मुख्य महाप्रबंधक (खान) / Chief General Manager (Mines)
सेल-आर. एस. पी - बालासागर खदान
SAIL-रेस्टो-बालासागर खान
बोलानी-758037 कथोहर, ओडिसा
Bolani-758037, Keonjhar, Odisha

ANNEXURE-VI

3.3 Surface/Effluent/Drinking Water Quality:

As per the guideline of CPCB, the following criteria shall be taken into consideration for use of the surface water bodies. Reports below shows the surface water quality analysis results at identified locations near the ML area.

Designated-Best-Use	Class of water	Criteria
Drinking Water Source without conventional treatment but after disinfection	A	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 50 or less pH between 6.5 and 8.5 Dissolved Oxygen 6mg/l or more Biochemical Oxygen Demand 5 days 20C 2mg/l or less
Outdoor bathing (Organized)	B	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 500 or less pH between 6.5 and 8.5 Dissolved Oxygen 5mg/l or more Biochemical Oxygen Demand 5 days 20C 3mg/l or less
Drinking water source after conventional treatment and disinfection	C	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 5000 or less pH between 6 to 9 Dissolved Oxygen 4mg/l or more Biochemical Oxygen Demand 5 days 20C 3mg/l or less
Propagation of Wild life and Fisheries	D	<ul style="list-style-type: none"> pH between 6.5 to 8.5 Dissolved Oxygen 4mg/l or more Free Ammonia (as N) 1.2 mg/l or less
Irrigation, Industrial Cooling, Controlled Waste disposal	E	<ul style="list-style-type: none"> pH between 6.0 to 8.5 Electrical Conductivity at 25C micro mhos/cm Max. 2250 Sodium absorption Ratio Max. 26 Boron Max. 2mg/l
	Below-E	Not Meeting A, B, C, D & E Criteria

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0087/0373/07/2025
		Issue Date of Test Report	05.08.2025
Type of Sample	Surface Water		
Sample Registration No.	0087	Name of Location	Jhikaria Nalla before Joining Karo River
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	22.07.2025	Time of Sample Collection	-
Date of Sample Receipt	24.07.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	24.07.2025	End Date of Analysis	05.08.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0373/07/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	IS 3025(Part-11)	2 - 12	7.61	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA,24th Ed. :2023,2540-D	5 -5000	20.0	-
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	1 -1000	22.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA, 23rd Ed. :2017,5210 B	1 -1000	2.2	3.0
5.	Fluoride as F	mg/l	APHA, 24th Ed.:2023 4500-F D	0.05 -10	0.14	1.5
6.	Nitrate Nitrogen	mg/l	IS 3025 (Part-34)	5-100	5.88	50
7.	Arsenic as As	mg/l	APHA, 24th Ed.: 2023,3125-B	0.01-2	<0.01	0.2
8.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025 (Part-52, Clause No-6)	0.05-20	<0.05	0.05
9.	Iron as Fe	mg/l	IS 3025 (Part-53, Clause No-6)	0.02-50	0.13	3.0
10.	Copper as Cu	mg/l	APHA, 24th Ed.: 2023,3125-B	0.05-5	<0.05	1.5
11.	Zinc as Zn	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-50	0.04	15.0
12.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.05	0.005
13.	Sulfide as S ²⁻	mg/l	IS 3025 (Part-29, Clause No-5)	0.05-10	<0.05	-
14.	Mercury as Hg	mg/l	APHA, 24th Ed.: 2023,3125-B	0.001-1	<0.001	-
15.	Manganese as Mn	mg/l	IS 3025 (Part-46, Clause No-5)	0.1-5.0	<0.1	-
16.	Lead as Pb	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.01-1	<0.01	0.1
17.	Cadmium as Cd	mg/l	APHA, 24th Ed.: 2023,3125-B	0.002-2	<0.002	0.01
18.	Nickel as Ni	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-10	<0.02	-
19.	Oil & Grease as O&G	mg/l	IS 3025 (Part-39, Clause No-5)	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part-26, Clause No-5)	0.5-10	<0.5	0.2
21.	Cyanide as CN ⁻	mg/l	APHA, 24th Ed:2023:2017, 4500-CN(K)	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----



Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0087/0371/07/2025
		Issue Date of Test Report	05.08.2025
Type of Sample	Surface Water		
Sample Registration No.	0087	Name of Location	Karo Near Lease Boundary at Linture Village
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	22.07.2025	Time of Sample Collection	-
Date of Sample Receipt	24.07.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	24.07.2025	End Date of Analysis	05.08.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0371/07/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	IS 3025(Part-11)	2 - 12	7.43	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Ed.:2023,2540-D	5 -5000	28.0	-
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	1 -1000	18.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA, 23rd Ed.:2017,5210 B	1 -1000	2.5	3.0
5.	Fluoride as F	mg/l	APHA, 24th Ed.:2023 4500-F D	0.05 -10	0.14	1.5
6.	Nitrate Nitrogen	mg/l	IS 3025 (Part-34)	5-100	<5	50
7.	Arsenic as As	mg/l	APHA, 24th Ed.: 2023,3125-B	0.01-2	<0.01	0.2
8.	Hexavalent Chromium as Cr ⁺⁺	mg/l	IS 3025 (Part-52, Clause No-6)	0.05-20	<0.05	0.05
9.	Iron as Fe	mg/l	IS 3025 (Part-53, Clause No-6)	0.02-50	0.10	3.0
10.	Copper as Cu	mg/l	APHA, 24th Ed.: 2023,3125-B	0.05-5	<0.05	1.5
11.	Zinc as Zn	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-50	0.06	15.0
12.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.05	0.005
13.	Sulphide as S ²⁻	mg/l	IS 3025 (Part-29, Clause No-5)	0.05-10	<0.05	-
14.	Mercury as Hg	mg/l	APHA, 24th Ed.: 2023,3125-B	0.001-1	<0.001	-
15.	Manganese as Mn	mg/l	IS 3025 (Part-46, Clause No-5)	0.1-5.0	<0.1	-
16.	Lead as Pb	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.01-1	<0.01	0.1
17.	Cadmium as Cd	mg/l	APHA, 24th Ed.: 2023,3125-B	0.002-2	<0.002	0.01
18.	Nickel as Ni	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-10	<0.02	-
19.	Oil & Grease as O&G	mg/l	IS 3025 (Part-39, Clause No-5)	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part-26, Clause No-5)	0.5-10	<0.5	0.2
21.	Cyanide as CN ⁻	mg/l	APHA, 24th Ed:2023:2017, 4500-CN(K)	0.02-10	<0.02	0.05


Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

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- The test samples will be disposed of after one Month from the date of issue of test report.

---End of Report---



Authorized By

Technical Manager
(Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0087/0375/07/2025
		Issue Date of Test Report	05.08.2025
Type of Sample	Surface Water		
Sample Registration No.	0087	Name of Location	Panpash Nallah
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	22.07.2025	Time of Sample Collection	-
Date of Sample Receipt	24.07.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	24.07.2025	End Date of Analysis	05.08.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0375/07/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	IS 3025(Part-11)	2 - 12	7.46	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Ed. :2023,2540-D	5 -5000	36.0	-
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	1 -1000	28.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA, 23rd Ed. :2017,5210 B	1 -1000	2.5	3.0
5.	Fluoride as F	mg/l	APHA, 24th Ed.:2023 4500-F D	0.05 -10	0.10	1.5
6.	Nitrate Nitrogen	mg/l	IS 3025 (Part-34)	5-100	6.22	50
7.	Arsenic as As	mg/l	APHA, 24th Ed.: 2023,3125-B	0.01-2	<0.01	0.2
8.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025 (Part-52, Clause No-6)	0.05-20	<0.05	0.05
9.	Iron as Fe	mg/l	IS 3025 (Part-53, Clause No-6)	0.02-50	0.22	3.0
10.	Copper as Cu	mg/l	APHA, 24th Ed. : 2023,3125-B	0.05-5	<0.05	1.5
11.	Zinc as Zn	mg/l	APHA, 23rd Ed. : 2017,3125-B	0.02-50	0.10	15.0
12.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.05	0.005
13.	Sulfide as S ²⁻	mg/l	IS 3025 (Part-29, Clause No-5)	0.05-10	<0.05	-
14.	Mercury as Hg	mg/l	APHA, 24th Ed. : 2023,3125-B	0.001-1	<0.001	-
15.	Manganese as Mn	mg/l	IS 3025 (Part-46, Clause No-5)	0.1-5.0	<0.1	-
16.	Lead as Pb	mg/l	APHA, 23rd Ed. : 2017,3125-B	0.01-1	<0.01	0.1
17.	Cadmium as Cd	mg/l	APHA, 24th Ed. : 2023,3125-B	0.002-2	<0.002	0.01
18.	Nickel as Ni	mg/l	APHA, 23rd Ed. : 2017,3125-B	0.02-10	<0.02	-
19.	Oil & Grease as O&G	mg/l	IS 3025 (Part-39, Clause No-5)	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part-26, Clause No-5)	0.5-10	<0.5	0.2
21.	Cyanide as CN ⁻	mg/l	APHA, 24th Ed:2023:2017, 4500-CN(K)	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.

---End of Report---



Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0087/0376/07/2025
		Issue Date of Test Report	05.08.2025
Type of Sample	Surface Water		
Sample Registration No.	0087	Name of Location	Karo River Intake
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	22.07.2025	Time of Sample Collection	-
Date of Sample Receipt	24.07.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	24.07.2025	End Date of Analysis	05.08.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0376/07/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	IS 3025(Part-11)	2 - 12	7.28	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA,24th Ed. :2023,2540-D	5 -5000	32.0	-
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	1 -1000	30.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA, 23 rd Ed. :2017,5210 B	1 -1000	2.7	3.0
5.	Fluoride as F	mg/l	APHA, 24th Ed.:2023 4500-F D	0.05 -10	0.10	1.5
6.	Nitrate Nitrogen	mg/l	IS 3025 (Part-34)	5-100	6.12	50
7.	Arsenic as As	mg/l	APHA, 24th Ed.: 2023,3125-B	0.01-2	<0.01	0.2
8.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025 (Part-52, Clause No-6)	0.05-20	<0.05	0.05
9.	Iron as Fe	mg/l	IS 3025 (Part-53, Clause No-6)	0.02-50	0.08	3.0
10.	Copper as Cu	mg/l	APHA, 24th Ed.: 2023,3125-B	0.05-5	<0.05	1.5
11.	Zinc as Zn	mg/l	APHA, 23 rd Ed.: 2017,3125-B	0.02-50	<0.02	15.0
12.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.05	0.005
13.	Sulfide as S ²⁻	mg/l	IS 3025 (Part-29, Clause No-5)	0.05-10	<0.05	-
14.	Mercury as Hg	mg/l	APHA, 24th Ed.: 2023,3125-B	0.001-1	<0.001	-
15.	Manganese as Mn	mg/l	IS 3025 (Part-46, Clause No-5)	0.1-5.0	<0.1	-
16.	Lead as Pb	mg/l	APHA, 23 rd Ed.: 2017,3125-B	0.01-1	<0.01	0.1
17.	Cadmium as Cd	mg/l	APHA, 24th Ed.: 2023,3125-B	0.002-2	<0.002	0.01
18.	Nickel as Ni	mg/l	APHA, 23 rd Ed.: 2017,3125-B	0.02-10	<0.02	-
19.	Oil & Grease as O&G	mg/l	IS 3025 (Part-39, Clause No-5)	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part-26, Clause No-5)	0.5-10	<0.5	0.2
21.	Cyanide as CN ⁻	mg/l	APHA, 24th Ed:2023:2017, 4500-CN(K)	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----



Authorized By

Technical Manager
(Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/DW/0087/0373/07/2025
		Issue Date of Test Report	05.08.2025
Type of Sample	Drinking Water		
Sample Registration No.	0087	Name of Location	Mount Club Tap Water
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	22.07.2025	Time of Sample Collection	-
Date of Sample Receipt	24.07.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	24.07.2025	End Date of Analysis	05.08.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0373/07/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.98	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA 2540 D 24th Ed: 2023	5 -5000	<5	-	-
3.	Fluoride as F	mg/l	APHA 24th Edition 4500-F B&D	0.05 -10	0.10	1	1.5
4.	Nitrate Nitrogen	mg/l	IS:3025 (Part 34)	5-100	<5	45	No Relax
5.	Arsenic as As	mg/l	APHA 3125-B-24th Ed.:2023	0.01-2	<0.01	0.01	0.05
6.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025(Part 52, Clause No.6)	0.05-20	<0.05	-	-
7.	Iron as Fe	mg/l	IS 3025 (Part 53, Clause No. 6)	0.02-50	0.08	0.3	No Relax
8.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	0.05	1.5
9.	Zinc as Zn	mg/l	APHA 3125 B, 23rd Ed:2017	0.02-50	0.04	5.0	15.0
10.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.001	0.001	0.002
11.	Sulfide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	0.05	No Relax
12.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.001	0.001	No Relax
13.	Manganese as Mn	mg/l	IS 3025 (Part46, Clause No.5)	0.1-5.0	<0.1	0.1	0.3
14.	Cadmium as Cd	mg/l	APHA 3125 B-24th Ed.:2023	0.002-2	<0.002	0.003	No Relax
15.	Nickel as Ni	mg/l	APHA 3125 B, 23rd Edition:2017	0.02-10	<0.02	0.02	No Relax
16.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	2 -1000	<2	-	-
17.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 5210(B) 23 rd :2017	1 -1000	<1	-	-
18.	Oil & Grease as O&G	mg/l	APHA, 24th Edition 5520 D	2.5-1000	<5	-	-
19.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2	No Relax
20.	Lead as Pb	mg/l	APHA 3125 B, 23rd Ed:2017	0.01-1	<0.01	0.01	No Relax
21.	Cyanide as Cn ⁻	mg/l	APHA, 24th Ed.:2023:2017,4500CN -(K)	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note-

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.
- BDL- Below Detection Limit

----End of Report----



Authorized By

Technical Manager
(Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/DW/0087/0374/07/2025
		Issue Date of Test Report	05.08.2025
Type of Sample	Drinking Water		
Sample Registration No.	0087	Name of Location	Karo Guest House Tap Water
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	22.07.2025	Time of Sample Collection	-
Date of Sample Receipt	24.07.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	24.07.2025	End Date of Analysis	05.08.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0374/07/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.76	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA 2540 D 24th Ed: 2023	5 -5000	<5	-	-
3.	Fluoride as F	mg/l	APHA 24th Edition 4500-F B&D	0.05 -10	0.12	1	1.5
4.	Nitrate Nitrogen	mg/l	IS:3025 (Part 34)	5-100	<5	45	No Relax
5.	Arsenic as As	mg/l	APHA 3125-B-24th Ed.:2023	0.01-2	<0.01	0.01	0.05
6.	Hexavalent Chromium as Cr ⁶⁺	mg/l	IS 3025(Part 52, Clause No.6)	0.05-20	<0.05	-	-
7.	Iron as Fe	mg/l	IS 3025 (Part 53, Clause No. 6)	0.02-50	0.10	0.3	No Relax
8.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	0.05	1.5
9.	Zinc as Zn	mg/l	APHA 3125 B, 23rd Ed:2017	0.02-50	<0.02	5.0	15.0
10.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.001	0.001	0.002
11.	Sulfide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	0.05	No Relax
12.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.001	0.001	No Relax
13.	Manganese as Mn	mg/l	IS 3025 (Part46, Clause No.5)	0.1-5.0	<0.1	0.1	0.3
14.	Cadmium as Cd	mg/l	APHA 3125 B-24th Ed.:2023	0.002-2	<0.002	0.003	No Relax
15.	Nickel as Ni	mg/l	APHA 3125 B, 23rd Edition:2017	0.02-10	<0.02	0.02	No Relax
16.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	2 -1000	<2	-	-
17.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 5210(B) 23 rd :2017	1 -1000	<1	-	-
18.	Oil & Grease as O&G	mg/l	APHA, 24th Edition 5520 D	2.5-1000	<5	-	-
19.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2	No Relax
20.	Lead as Pb	mg/l	APHA 3125 B, 23rd Ed:2017	0.01-1	<0.01	0.01	No Relax
21.	Cyanide as Cn ⁻	mg/l	APHA, 24th Ed.:2023:2017,4500CN -(K)	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below Detection Limit

---End of Report---



Authorized By

Technical Manager
(Dr. Midhun G)



Ecomen Laboratories Pvt. Ltd.

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TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/WW/0087/0375/07/2025
		Issue Date of Test Report	05.08.2025
Type of Sample	Waste Water		
Sample Registration No.	0087	Name of Location	Oil Catch Pit Water Bottom Garbage
Sampling Method	APHA 24 th Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	22.07.2025	Time of Sample Collection	-
Date of Sample Receipt	24.07.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	24.07.2025	End Date of Analysis	05.08.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0375/07/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	GSR 422 (E) Desirable Limit
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.68	5.5-9.0
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540 D	5 -5000	38.0	100.0
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part 58)	1 -1000	20.0	250.0
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	IS 3025 (Part 44)	1 -1000	2.9	30.0
5.	Oil & Grease as O&G	mg/l	IS 3025 (Part39, Clause No.5)	2.5-1000	<2.5	10.0
6.	Fluoride as F	mg/l	APHA 4500 F D-24th Ed.: 2023	0.05 -10	0.24	2.0
7.	Nitrate nitrogen	mg/l	APHA 4500 NO2 B-24 th Ed.: 2023	5-100	7.0	-
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.01-2	0.20	-
9.	Arsenic as As	mg/l	APHA 3125-B-23rd Edition: 2017	0.05-20	<0.01	0.2
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IEC 62321: 2021	0.02-50	<0.05	2.0
11.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	3.0
12.	Zinc as Zn	mg/l	APHA 3125 B-24th Ed.:2023	0.02-50	<0.02	5.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 5530 C,D-24th Ed.:2023	0.05 - 10	<0.05	1.0
14.	Sulphide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	2.0
15.	Nickel as Ni	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.02	3.0
16.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.: 2023	0.1-5.0	<0.001	0.01
17.	Manganese as Mn	mg/l	IS 3025 (Part46, Clause No.5)	0.01-1	<0.1	-
18.	Lead as Pb	mg/l	APHA 3125 B-24th Ed.: 2023	0.002-2	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 3125 B-23rd Ed: 2017	0.02-10	<0.002	2.0
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	4.4	-
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.2

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

---End of Report---



Authorized By

Technical Manager
(Dr. Midhun G)



Ecomen Laboratories Pvt. Ltd.

CIN : U71200KA2024PTC187556 / GSTIN : 29AAICE1418R1Z3

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TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/WW/0087/0376/07/2025
		Issue Date of Test Report	05.08.2025
Type of Sample	Waste Water		
Sample Registration No.	0087	Name of Location	Oil Catch pit water G-Area
Sampling Method	APHA 24 th Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	22.07.2025	Time of Sample Collection	-
Date of Sample Receipt	24.07.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	24.07.2025	End Date of Analysis	05.08.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0376/07/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	GSR 422 (E)
						Desirable Limit
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.74	5.5-9.0
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540 D	5 -5000	40.0	100.0
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part 58)	1 -1000	24.0	250.0
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	IS 3025 (Part 44)	1 -1000	3.2	30.0
5.	Oil & Grease as O&G	mg/l	IS 3025 (Part39, Clause No.5)	2.5-1000	<2.5	10.0
6.	Fluoride as F	mg/l	APHA 4500 F D-24th Ed.: 2023	0.05 -10	0.21	2.0
7.	Nitrate nitrogen	mg/l	APHA 4500 NO2 B-24 th Ed.: 2023	5-100	5.47	-
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.01-2	0.22	-
9.	Arsenic as As	mg/l	APHA 3125-B-23rd Edition: 2017	0.05-20	<0.01	0.2
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IEC 62321: 2021	0.02-50	<0.05	2.0
11.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	3.0
12.	Zinc as Zn	mg/l	APHA 3125 B-24th Ed.:2023	0.02-50	<0.02	5.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 5530 C,D-24th Ed.:2023	0.05 - 10	<0.05	1.0
14.	Sulphide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	2.0
15.	Nickel as Ni	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.02	3.0
16.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.: 2023	0.1-5.0	<0.001	0.01
17.	Manganese as Mn	mg/l	IS 3025 (Part46, Clause No.5)	0.01-1	<0.1	-
18.	Lead as Pb	mg/l	APHA 3125 B-24th Ed.: 2023	0.002-2	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 3125 B-23rd Ed: 2017	0.02-10	<0.002	2.0
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	5.2	-
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.2

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----



Authorized By

Technical Manager
(Dr. Midhun G)

3.3 Surface/Effluent/Drinking Water Quality:

As per the guideline of CPCB, the following criteria shall be taken into consideration for use of the surface water bodies. Reports below shows the surface water quality analysis results at identified locations near the ML area.

Designated-Best-Use	Class of water	Criteria
Drinking Water Source without conventional treatment but after disinfection	A	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 50 or less pH between 6.5 and 8.5 Dissolved Oxygen 6mg/l or more Biochemical Oxygen Demand 5 days 20C 2mg/l or less
Outdoor bathing (Organized)	B	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 500 or less pH between 6.5 and 8.5 Dissolved Oxygen 5mg/l or more Biochemical Oxygen Demand 5 days 20C 3mg/l or less
Drinking water source after conventional treatment and disinfection	C	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 5000 or less pH between 6 to 9 Dissolved Oxygen 4mg/l or more Biochemical Oxygen Demand 5 days 20C 3mg/l or less
Propagation of Wild life and Fisheries	D	<ul style="list-style-type: none"> pH between 6.5 to 8.5 Dissolved Oxygen 4mg/l or more Free Ammonia (as N) 1.2 mg/l or less
Irrigation, Industrial Cooling, Controlled Waste disposal	E	<ul style="list-style-type: none"> pH between 6.0 to 8.5 Electrical Conductivity at 25C micro mhos/cm Max. 2250 Sodium absorption Ratio Max. 26 Boron Max. 2mg/l
	Below-E	Not Meeting A, B, C, D & E Criteria

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0088/0380/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Surface Water		
Sample Registration No.	0088	Name of Location	Karo Near Lease Boundary at Limture Village
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0380/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	IS 3025(Part-11)	2 - 12	7.28	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA,24th Ed. :2023,2540-D	5 -5000	30.0	-
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	1 -1000	28.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA, 23rd Ed. :2017,5210 B	1 -1000	2.8	3.0
5.	Fluoride as F	mg/l	APHA, 24th Ed.:2023 4500-F D	0.05 -10	0.12	1.5
6.	Nitrate Nitrogen	mg/l	IS 3025 (Part-34)	5-100	<5	50
7.	Arsenic as As	mg/l	APHA, 24th Ed.: 2023,3125-B	0.01-2	<0.01	0.2
8.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025 (Part-52, Clause No-6)	0.05-20	<0.05	0.05
9.	Iron as Fe	mg/l	IS 3025 (Part-53, Clause No-6)	0.02-50	0.14	3.0
10.	Copper as Cu	mg/l	APHA, 24th Ed.: 2023,3125-B	0.05-5	<0.05	1.5
11.	Zinc as Zn	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-50	0.08	15.0
12.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.05	0.005
13.	Sulphide as S ²⁻	mg/l	IS 3025 (Part-29, Clause No-5)	0.05-10	<0.05	-
14.	Mercury as Hg	mg/l	APHA, 24th Ed.: 2023,3125-B	0.001-1	<0.001	-
15.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	-
16.	Lead as Pb	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.01-1	<0.01	0.1
17.	Cadmium as Cd	mg/l	APHA, 24th Ed.: 2023,3125-B	0.002-2	<0.002	0.01
18.	Nickel as Ni	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-10	<0.02	-
19.	Oil & Grease as O&G	mg/l	IS 3025 (Part-39, Clause No-5)	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part-26, Clause No-5)	0.5-10	<0.5	0.2
21.	Cyanide as CN ⁻	mg/l	APHA, 24th Ed:2023:2017, 4500-CN(K)	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0088/0381/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Surface Water		
Sample Registration No.	0088	Name of Location	Jhikaria Nalla before Joining Karo River
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0381/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	IS 3025(Part-11)	2 - 12	7.49	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA,24th Ed. :2023,2540-D	5 -5000	18.0	-
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	1 -1000	20.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA, 23rd Ed. :2017,5210 B	1 -1000	2.4	3.0
5.	Fluoride as F	mg/l	APHA, 24th Ed.:2023 4500-F D	0.05 -10	0.12	1.5
6.	Nitrate Nitrogen	mg/l	IS 3025 (Part-34)	5-100	6.12	50
7.	Arsenic as As	mg/l	APHA, 24th Ed.: 2023,3125-B	0.01-2	<0.01	0.2
8.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025 (Part-52, Clause No-6)	0.05-20	<0.05	0.05
9.	Iron as Fe	mg/l	IS 3025 (Part-53, Clause No-6)	0.02-50	0.15	3.0
10.	Copper as Cu	mg/l	APHA, 24th Ed.: 2023,3125-B	0.05-5	<0.05	1.5
11.	Zinc as Zn	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-50	0.07	15.0
12.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.05	0.005
13.	Sulfide as S ²⁻	mg/l	IS 3025 (Part-29, Clause No-5)	0.05-10	<0.05	-
14.	Mercury as Hg	mg/l	APHA, 24th Ed.: 2023,3125-B	0.001-1	<0.001	-
15.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	-
16.	Lead as Pb	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.01-1	<0.01	0.1
17.	Cadmium as Cd	mg/l	APHA, 24th Ed.: 2023,3125-B	0.002-2	<0.002	0.01
18.	Nickel as Ni	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-10	<0.02	-
19.	Oil & Grease as O&G	mg/l	IS 3025 (Part-39, Clause No-5)	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part-26, Clause No-5)	0.5-10	<0.5	0.2
21.	Cyanide as CN ⁻	mg/l	APHA, 24th Ed:2023:2017, 4500-CN(K)	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0088/0382/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Surface Water		
Sample Registration No.	0088	Name of Location	Panpash Nallah
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0382/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	IS 3025(Part-11)	2 - 12	7.50	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA,24th Ed. :2023,2540-D	5 -5000	32.0	-
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	1 -1000	30.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA, 23rd Ed. :2017,5210 B	1 -1000	2.7	3.0
5.	Fluoride as F	mg/l	APHA, 24th Ed.:2023 4500-F D	0.05 -10	0.10	1.5
6.	Nitrate Nitrogen	mg/l	IS 3025 (Part-34)	5-100	6.56	50
7.	Arsenic as As	mg/l	APHA, 24th Ed.: 2023,3125-B	0.01-2	<0.01	0.2
8.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025 (Part-52, Clause No-6)	0.05-20	<0.05	0.05
9.	Iron as Fe	mg/l	IS 3025 (Part-53, Clause No-6)	0.02-50	0.20	3.0
10.	Copper as Cu	mg/l	APHA, 24th Ed.: 2023,3125-B	0.05-5	<0.05	1.5
11.	Zinc as Zn	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-50	0.08	15.0
12.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.05	0.005
13.	Sulfide as S ²⁻	mg/l	IS 3025 (Part-29, Clause No-5)	0.05-10	<0.05	-
14.	Mercury as Hg	mg/l	APHA, 24th Ed.: 2023,3125-B	0.001-1	<0.001	-
15.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	-
16.	Lead as Pb	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.01-1	<0.01	0.1
17.	Cadmium as Cd	mg/l	APHA, 24th Ed.: 2023,3125-B	0.002-2	<0.002	0.01
18.	Nickel as Ni	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-10	<0.02	-
19.	Oil & Grease as O&G	mg/l	IS 3025 (Part-39, Clause No-5)	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part-26, Clause No-5)	0.5-10	<0.5	0.2
21.	Cyanide as CN ⁻	mg/l	APHA, 24th Ed:2023:2017, 4500-CN(K)	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0088/0383/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Surface Water		
Sample Registration No.	0088	Name of Location	Karo River Intake
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0383/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	IS 3025(Part-11)	2 - 12	7.34	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA,24th Ed. :2023,2540-D	5 -5000	36.0	-
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	1 -1000	32.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA, 23rd Ed. :2017,5210 B	1 -1000	2.9	3.0
5.	Fluoride as F	mg/l	APHA, 24th Ed.:2023 4500-F D	0.05 -10	0.08	1.5
6.	Nitrate Nitrogen	mg/l	IS 3025 (Part-34)	5-100	5.86	50
7.	Arsenic as As	mg/l	APHA, 24th Ed.: 2023,3125-B	0.01-2	<0.01	0.2
8.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025 (Part-52, Clause No-6)	0.05-20	<0.05	0.05
9.	Iron as Fe	mg/l	IS 3025 (Part-53, Clause No-6)	0.02-50	0.12	3.0
10.	Copper as Cu	mg/l	APHA, 24th Ed.: 2023,3125-B	0.05-5	<0.05	1.5
11.	Zinc as Zn	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-50	<0.02	15.0
12.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.05	0.005
13.	Sulfide as S ²⁻	mg/l	IS 3025 (Part-29, Clause No-5)	0.05-10	<0.05	-
14.	Mercury as Hg	mg/l	APHA, 24th Ed.: 2023,3125-B	0.001-1	<0.001	-
15.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	-
16.	Lead as Pb	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.01-1	<0.01	0.1
17.	Cadmium as Cd	mg/l	APHA, 24th Ed.: 2023,3125-B	0.002-2	<0.002	0.01
18.	Nickel as Ni	mg/l	APHA, 23rd Ed.: 2017,3125-B	0.02-10	<0.02	-
19.	Oil & Grease as O&G	mg/l	IS 3025 (Part-39, Clause No-5)	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part-26, Clause No-5)	0.5-10	<0.5	0.2
21.	Cyanide as CN ⁻	mg/l	APHA, 24th Ed:2023:2017, 4500-CN(K)	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/DW/0088/0375/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Drinking Water		
Sample Registration No.	0088	Name of Location	Mount Club Tap Water
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0375/08/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.90	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA 2540 D 24th Ed: 2023	5 -5000	<5	-	-
3.	Fluoride as F	mg/l	APHA 24th Edition 4500-F B&D	0.05 -10	0.12	1	1.5
4.	Nitrate Nitrogen	mg/l	IS:3025 (Part 34)	5-100	<5	45	No Relax
5.	Arsenic as As	mg/l	APHA 3125-B-24th Ed.:2023	0.01-2	<0.01	0.01	0.05
6.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025(Part 52,Clause No.6)	0.05-20	<0.05	-	-
7.	Iron as Fe	mg/l	IS 3025 (Part 53, Clause No. 6)	0.02-50	0.06	0.3	No Relax
8.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	0.05	1.5
9.	Zinc as Zn	mg/l	APHA 3125 B, 23rd Ed:2017	0.02-50	0.08	5.0	15.0
10.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.001	0.001	0.002
11.	Sulfide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	0.05	No Relax
12.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.001	0.001	No Relax
13.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	0.1	0.3
14.	Cadmium as Cd	mg/l	APHA 3125 B-24th Ed.:2023	0.002-2	<0.002	0.003	No Relax
15.	Nickel as Ni	mg/l	APHA 3125 B, 23rd Edition:2017	0.02-10	<0.02	0.02	No Relax
16.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	2 -1000	<2	-	-
17.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 5210(B) 23rd:2017	1 -1000	<1	-	-
18.	Oil & Grease as O&G	mg/l	APHA, 24th Edition 5520 D	2.5-1000	<5	-	-
19.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2	No Relax
20.	Lead as Pb	mg/l	APHA 3125 B, 23rd Ed:2017	0.01-1	<0.01	0.01	No Relax
21.	Cyanide as Cn ⁻	mg/l	APHA, 24th Ed.:2023:2017,4500CN -(K)	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note-

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below Detection Limit

----End of Report----

Authorized By

Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/DW/0088/0376/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Drinking Water		
Sample Registration No.	0088	Name of Location	Karo Guest House Tap Water
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0376/08/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.80	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA 2540 D 24th Ed: 2023	5 -5000	<5	-	-
3.	Fluoride as F	mg/l	APHA 24th Edition 4500-F B&D	0.05 -10	0.12	1	1.5
4.	Nitrate Nitrogen	mg/l	IS:3025 (Part 34)	5-100	<5	45	No Relax
5.	Arsenic as As	mg/l	APHA 3125-B-24th Ed.:2023	0.01-2	<0.01	0.01	0.05
6.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025(Part 52,Clause No.6)	0.05-20	<0.05	-	-
7.	Iron as Fe	mg/l	IS 3025 (Part 53, Clause No. 6)	0.02-50	0.12	0.3	No Relax
8.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	0.05	1.5
9.	Zinc as Zn	mg/l	APHA 3125 B, 23rd Ed:2017	0.02-50	<0.02	5.0	15.0
10.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.001	0.001	0.002
11.	Sulfide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	0.05	No Relax
12.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.001	0.001	No Relax
13.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	0.1	0.3
14.	Cadmium as Cd	mg/l	APHA 3125 B-24th Ed.:2023	0.002-2	<0.002	0.003	No Relax
15.	Nickel as Ni	mg/l	APHA 3125 B, 23rd Edition:2017	0.02-10	<0.02	0.02	No Relax
16.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	2 -1000	<2	-	-
17.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 5210(B) 23rd:2017	1 -1000	<1	-	-
18.	Oil & Grease as O&G	mg/l	APHA, 24th Edition 5520 D	2.5-1000	<5	-	-
19.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2	No Relax
20.	Lead as Pb	mg/l	APHA 3125 B, 23rd Ed:2017	0.01-1	<0.01	0.01	No Relax
21.	Cyanide as Cn ⁻	mg/l	APHA, 24th Ed.:2023:2017,4500CN -(K)	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below Detection Limit

----End of Report----

Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/DW/0088/0377/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Ground Water		
Sample Registration No.	0088	Name of Location	Balagoda Village
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0377/08/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.86	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA 2540 D 24th Ed: 2023	5 -5000	<5	-	-
3.	Fluoride as F	mg/l	APHA 24th Edition 4500-F B&D	0.05 -10	0.14	1	1.5
4.	Nitrate Nitrogen	mg/l	IS:3025 (Part 34)	5-100	<5	45	No Relax
5.	Arsenic as As	mg/l	APHA 3125-B-24th Ed.:2023	0.01-2	<0.01	0.01	0.05
6.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025(Part 52,Clause No.6)	0.05-20	<0.05	-	-
7.	Iron as Fe	mg/l	IS 3025 (Part 53, Clause No. 6)	0.02-50	0.10	0.3	No Relax
8.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	0.05	1.5
9.	Zinc as Zn	mg/l	APHA 3125 B, 23rd Ed:2017	0.02-50	0.08	5.0	15.0
10.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.001	0.001	0.002
11.	Sulfide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	0.05	No Relax
12.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.001	0.001	No Relax
13.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	0.1	0.3
14.	Cadmium as Cd	mg/l	APHA 3125 B-24th Ed.:2023	0.002-2	<0.002	0.003	No Relax
15.	Nickel as Ni	mg/l	APHA 3125 B, 23rd Edition:2017	0.02-10	<0.02	0.02	No Relax
16.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	2 -1000	<2	-	-
17.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 5210(B) 24 th Ed.:2023:2017	1 -1000	<1	-	-
18.	Oil & Grease as O&G	mg/l	APHA, 24th Edition 5520 D	2.5-1000	<5	-	-
19.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2	No Relax
20.	Lead as Pb	mg/l	APHA 3125 B, 23rd Ed:2017	0.01-1	<0.01	0.01	No Relax
21.	Cyanide as Cn ⁻	mg/l	APHA, 24th Ed.:2023:2017,4500CN -(K)	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note-

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below Detection Limit

----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/DW/0088/0378/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Ground Water		
Sample Registration No.	0088	Name of Location	Bolani Gouda Basti
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0378/08/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.86	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA 2540 D 24th Ed: 2023	5 -5000	<5	-	-
3.	Fluoride as F	mg/l	APHA 24th Edition 4500-F B&D	0.05 -10	0.12	1	1.5
4.	Nitrate Nitrogen	mg/l	IS:3025 (Part 34)	5-100	<5	45	No Relax
5.	Arsenic as As	mg/l	APHA 3125-B-24th Ed.:2023	0.01-2	<0.01	0.01	0.05
6.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025(Part 52,Clause No.6)	0.05-20	<0.05	-	-
7.	Iron as Fe	mg/l	IS 3025 (Part 53, Clause No. 6)	0.02-50	0.12	0.3	No Relax
8.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	0.05	1.5
9.	Zinc as Zn	mg/l	APHA 3125 B, 23rd Ed:2017	0.02-50	<0.02	5.0	15.0
10.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.001	0.001	0.002
11.	Sulfide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	0.05	No Relax
12.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.001	0.001	No Relax
13.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	0.1	0.3
14.	Cadmium as Cd	mg/l	APHA 3125 B-24th Ed.:2023	0.002-2	<0.002	0.003	No Relax
15.	Nickel as Ni	mg/l	APHA 3125 B, 23rd Edition:2017	0.02-10	<0.02	0.02	No Relax
16.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	2 -1000	<2	-	-
17.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 5210(B) 24 th Ed.:2023:2017	1 -1000	<1	-	-
18.	Oil & Grease as O&G	mg/l	APHA, 24th Edition 5520 D	2.5-1000	<5	-	-
19.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2	No Relax
20.	Lead as Pb	mg/l	APHA 3125 B, 23rd Ed:2017	0.01-1	<0.01	0.01	No Relax
21.	Cyanide as Cn ⁻	mg/l	APHA, 24th Ed.:2023:2017,4500CN -(K)	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below Detection Limit

----End of Report----

Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/DW/0088/0379/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Ground Water		
Sample Registration No.	0088	Name of Location	Bolani Basti Bolani Village
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0379/08/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
22.	pH	-	IS 3025 (Part 11)	2 - 12	6.72	6.5-8.5	No Relax
23.	Total Suspended Solids as TSS	mg/l	APHA 2540 D 24th Ed: 2023	5 -5000	<5	-	-
24.	Fluoride as F	mg/l	APHA 24th Edition 4500-F B&D	0.05 -10	0.08	1	1.5
25.	Nitrate Nitrogen	mg/l	IS:3025 (Part 34)	5-100	<5	45	No Relax
26.	Arsenic as As	mg/l	APHA 3125-B-24th Ed.:2023	0.01-2	<0.01	0.01	0.05
27.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IS 3025(Part 52,Clause No.6)	0.05-20	<0.05	-	-
28.	Iron as Fe	mg/l	IS 3025 (Part 53, Clause No. 6)	0.02-50	0.12	0.3	No Relax
29.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	0.05	1.5
30.	Zinc as Zn	mg/l	APHA 3125 B, 23rd Ed:2017	0.02-50	<0.02	5.0	15.0
31.	Phenolic Compound as C ₆ H ₅ OH	mg/l	IS:3025(P-43)(b):Sec:2:2021	0.05 - 10	<0.001	0.001	0.002
32.	Sulfide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	0.05	No Relax
33.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.001	0.001	No Relax
34.	Manganese as Mn	mg/l	APHA 3125 B-24th Ed.:2023	0.1-5.0	<0.1	0.1	0.3
35.	Cadmium as Cd	mg/l	APHA 3125 B-24th Ed.:2023	0.002-2	<0.002	0.003	No Relax
36.	Nickel as Ni	mg/l	APHA 3125 B, 23rd Edition:2017	0.02-10	<0.02	0.02	No Relax
37.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part-58):2023	2 -1000	<2	-	-
38.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 5210(B) 24 th Ed.:2023:2017	1 -1000	<1	-	-
39.	Oil & Grease as O&G	mg/l	APHA, 24th Edition 5520 D	2.5-1000	<5	-	-
40.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2	No Relax
41.	Lead as Pb	mg/l	APHA 3125 B, 23rd Ed:2017	0.01-1	<0.01	0.01	No Relax
42.	Cyanide as Cn ⁻	mg/l	APHA, 24th Ed.:2023:2017,4500CN -(K)	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note:

5. Test results relate to the items sampled & tested.
6. Test report shall not be reproduced except in full without approval of the laboratory.
7. The test samples will be disposed of after one Month from the date of issue of test report.
8. BDL- Below Detection Limit

----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/WW/0088/0384/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Waste Water		
Sample Registration No.	0088	Name of Location	Oil Catch Pit Water Bottom Garbage
Sampling Method	APHA 24 th Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0385/08/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	GSR 422 (E)
						Desirable Limit
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.62	5.5-9.0
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540 D	5 -5000	40.0	100.0
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part 58)	1 -1000	26.0	250.0
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	IS 3025 (Part 44)	1 -1000	2.9	30.0
5.	Oil & Grease as O&G	mg/l	IS 3025 (Part39, Clause No.5)	2.5-1000	<2.5	10.0
6.	Fluoride as F	mg/l	APHA 4500 F D-24th Ed.: 2023	0.05 -10	0.16	2.0
7.	Nitrate nitrogen	mg/l	APHA 4500 NO ₂ B-24 th Ed.: 2023	5-100	6.62	-
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.01-2	0.16	-
9.	Arsenic as As	mg/l	APHA 3125-B-23rd Edition: 2017	0.05-20	<0.01	0.2
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IEC 62321: 2021	0.02-50	<0.05	2.0
11.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	3.0
12.	Zinc as Zn	mg/l	APHA 3125 B-24th Ed.:2023	0.02-50	<0.02	5.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 5530 C,D-24th Ed.:2023	0.05 - 10	<0.05	1.0
14.	Sulphide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	2.0
15.	Nickel as Ni	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.02	3.0
16.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.: 2023	0.1-5.0	<0.001	0.01
17.	Manganese as Mn	mg/l	APHA 3125 B-23rd Ed.:2023	0.01-1	<0.1	-
18.	Lead as Pb	mg/l	APHA 3125 B-24th Ed.: 2023	0.002-2	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 3125 B-23rd Ed: 2017	0.02-10	<0.002	2.0
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	4.2	-
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.2

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----



Authorized By

 Technical Manager
 (Dr. Midhun G)

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/WW/0088/0386/08/2025
		Issue Date of Test Report	05.09.2025
Type of Sample	Waste Water		
Sample Registration No.	0088	Name of Location	Oil Catch pit water G-Area
Sampling Method	APHA 24 th Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	19.08.2025	Time of Sample Collection	-
Date of Sample Receipt	21.08.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	21.08.2025	End Date of Analysis	05.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0386/08/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	GSR 422 (E)
						Desirable Limit
1.	pH	-	IS 3025 (Part 11)	2 - 12	6.68	5.5-9.0
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540 D	5 -5000	36.0	100.0
3.	Chemical Oxygen Demand as COD	mg/l	IS 3025 (Part 58)	1 -1000	22.0	250.0
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	IS 3025 (Part 44)	1 -1000	3.0	30.0
5.	Oil & Grease as O&G	mg/l	IS 3025 (Part39, Clause No.5)	2.5-1000	<2.5	10.0
6.	Fluoride as F	mg/l	APHA 4500 F D-24th Ed.: 2023	0.05 -10	0.20	2.0
7.	Nitrate nitrogen	mg/l	APHA 4500 NO2 B-24 th Ed.: 2023	5-100	5.72	-
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.01-2	0.20	-
9.	Arsenic as As	mg/l	APHA 3125-B-23rd Edition: 2017	0.05-20	<0.01	0.2
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	IEC 62321: 2021	0.02-50	<0.05	2.0
11.	Copper as Cu	mg/l	APHA 3125 B-24th Ed.:2023	0.05-5	<0.05	3.0
12.	Zinc as Zn	mg/l	APHA 3125 B-24th Ed.:2023	0.02-50	<0.02	5.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 5530 C,D-24th Ed.:2023	0.05 - 10	<0.05	1.0
14.	Sulphide as S ²⁻	mg/l	IS 3025 (Part 29, Clause No. 5)	0.05-10	<0.05	2.0
15.	Nickel as Ni	mg/l	APHA 3125 B-24th Ed.:2023	0.001-1	<0.02	3.0
16.	Mercury as Hg	mg/l	APHA 3125 B-24th Ed.: 2023	0.1-5.0	<0.001	0.01
17.	Manganese as Mn	mg/l	APHA 3125 B-23rd Ed.:2023	0.01-1	<0.1	-
18.	Lead as Pb	mg/l	APHA 3125 B-24th Ed.: 2023	0.002-2	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 3125 B-23rd Ed: 2017	0.02-10	<0.002	2.0
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	4.8	-
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.2

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----


 Authorized By

 Technical Manager
 (Dr. Midhun G)

(Vikas Kumar)

(Abhishek Kumar Singh)

3.3 Surface/Effluent/Drinking Water Quality:

As per the guideline of CPCB, the following criteria shall be taken into consideration for use of the surface water bodies. Reports below shows the surface water quality analysis results at identified locations near the ML area.

Designated-Best-Use	Class of water	Criteria
Drinking Water Source without conventional treatment but after disinfection	A	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 50 or less pH between 6.5 and 8.5 Dissolved Oxygen 6mg/l or more Biochemical Oxygen Demand 5 days 20C 2mg/l or less
Outdoor bathing (Organized)	B	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 500 or less pH between 6.5 and 8.5 Dissolved Oxygen 5mg/l or more Biochemical Oxygen Demand 5 days 20C 3mg/l or less
Drinking water source after conventional treatment and disinfection	C	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 5000 or less pH between 6 to 9 Dissolved Oxygen 4mg/l or more Biochemical Oxygen Demand 5 days 20C 3mg/l or less
Propagation of Wild life and Fisheries	D	<ul style="list-style-type: none"> pH between 6.5 to 8.5 Dissolved Oxygen 4mg/l or more Free Ammonia (as N) 1.2 mg/l or less
Irrigation, Industrial Cooling, Controlled Waste disposal	E	<ul style="list-style-type: none"> pH between 6.0 to 8.5 Electrical Conductivity at 25C micro mhos/cm Max. 2250 Sodium absorption Ratio Max. 26 Boron Max. 2mg/l
	Below-E	Not Meeting A, B, C, D & E Criteria

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Steel Authority of India limited, Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha	Test Report No.	ECO/LAB/SW/0088/0380/08/2025
		Issue Date of Test Report	05.10.2025
Type of Sample	Surface Water		
Sample Registration No.	0088	Name of Location	Karo Near Lease Boundary at Linture Village
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	12.09.2025	Time of Sample Collection	-
Date of Sample Receipt	15.09.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	15.09.2025	End Date of Analysis	30.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0380/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.20	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	26.0	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	1 -1000	22.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	2.4	3.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A,B,D	0.05 -10	0.14	1.5
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A.C	5-100	<5	50
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B	0.01-2	<0.01	0.2
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-20	<0.05	0.05
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.02-50	0.18	3.0
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 CRA,B	0.05-5	<0.05	1.5
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-50	0.12	15.0
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05 - 10	<0.05	0.005
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05-10	<0.05	-
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.001-1	<0.001	-
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5.0	<0.1	-
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.01	0.1
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.002	0.01
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.02	-
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By


 Technical Manager
 (Vikas Kumar)

Authorized By


 Quality Manager
 (Dr. Abhishek Kumar Singh)


TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Steel Authority of India limited, Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha	Test Report No.	ECO/LAB/SW/0088/0381/08/2025
		Issue Date of Test Report	05.10.2025
Type of Sample	Surface Water		
Sample Registration No.	0088	Name of Location	Jhikaria Nalla before Joining Karo River
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	12.09.2025	Time of Sample Collection	-
Date of Sample Receipt	15.09.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	15.09.2025	End Date of Analysis	30.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0381/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.31	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	28.0	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A,C	1 -1000	30.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	2.2	3.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	0.05 -10	0.10	1.5
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A.C	5-100	5.44	50
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B	0.01-2	<0.01	0.2
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-20	<0.05	0.05
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.02-50	0.20	3.0
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 CRA,B	0.05-5	<0.05	1.5
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-50	0.06	15.0
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05 - 10	<0.05	0.005
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05-10	<0.05	-
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.001-1	<0.001	-
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5.0	<0.1	-
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.01	0.1
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.002	0.01
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.02	-
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23 rd Ed: 2017	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By

(Signature)
Technical Manager
(Vikas Kumar)

Authorized By

(Signature)
Quality Manager
(Dr. Abhishek Kumar Singh)



TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Steel Authority of India limited, Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha	Test Report No.	ECO/LAB/SW/0088/0382/08/2025
		Issue Date of Test Report	05.10.2025
Type of Sample	Surface Water		
Sample Registration No.	0088	Name of Location	Panpash Nallah
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	12.09.2025	Time of Sample Collection	-
Date of Sample Receipt	15.09.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	15.09.2025	End Date of Analysis	30.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0382/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.38	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	24.0	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A,C	1 -1000	27.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	2.8	3.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A,B,D	0.05 -10	0.14	1.5
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A,C	5-100	6.22	50
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B	0.01-2	<0.01	0.2
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-20	<0.05	0.05
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.02-50	0.22	3.0
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 CRA,B	0.05-5	<0.05	1.5
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-50	0.08	15.0
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05 - 10	<0.05	0.005
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05-10	<0.05	-
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.001-1	<0.001	-
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5.0	<0.1	-
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.01	0.1
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.002	0.01
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.02	-
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By


Technical Manager
(Vikas Kumar)

Authorized By


Quality Manager
(Dr. Abhishek Kumar Singh)



TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Steel Authority of India limited, Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha	Test Report No.	ECO/LAB/SW/0088/0383/08/2025
		Issue Date of Test Report	05.10.2025
Type of Sample	Surface Water		
Sample Registration No.	0088	Name of Location	Karo River Intake
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	12.09.2025	Time of Sample Collection	-
Date of Sample Receipt	15.09.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	15.09.2025	End Date of Analysis	30.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0383/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.38	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	32.0	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A,C	1 -1000	34.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	2.7	3.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B,D	0.05 -10	0.06	1.5
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A,C	5-100	6.0	50
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B	0.01-2	<0.01	0.2
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-20	<0.05	0.05
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.02-50	0.18	3.0
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 CRA,B	0.05-5	<0.05	1.5
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-50	<0.02	15.0
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05 - 10	<0.05	0.005
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05-10	<0.05	-
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.001-1	<0.001	-
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5.0	<0.1	-
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.01	0.1
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.002	0.01
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.02	-
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	2.5-1000	<0.1	0.1
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	0.2
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By


Technical Manager
(Vikas Kumar)

Authorized By


Quality Manager
(Dr. Abhishek Kumar Singh)



TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Steel Authority of India limited, Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha	Test Report No.	ECO/LAB/DW/0088/0375/08/2025
		Issue Date of Test Report	05.10.2025
Type of Sample	Drinking Water		
Sample Registration No.	0088	Name of Location	Mount Club Tap Water
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	12.09.2025	Time of Sample Collection	-
Date of Sample Receipt	15.09.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	15.09.2025	End Date of Analysis	30.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0375/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.02	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	<5	-	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	0.05 -10	0.14	1	1.5
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	5-100	<5	45	No Relax
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	0.01-2	<0.01	0.01	0.05
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 .C	0.05-20	<0.05	-	-
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03 2-F	0.02-50	0.10	0.3	No Relax
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-5	<0.05	0.05	1.5
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.02-50	0.06	5.0	15.0
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 Cra B	0.05 - 10	<0.001	0.001	0.002
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-10	<0.05	0.05	No Relax
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	0.001	No Relax
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.1-5.0	<0.1	0.1	0.3
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.002-2	<0.002	0.003	No Relax
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.02	0.02	No Relax
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	2 -1000	<2	-	-
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	1 -1000	<1	-	-
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	2.5-1000	<5	-	-
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.5-10	<0.5	0.2	No Relax
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.01-1	<0.01	0.01	No Relax
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note-

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below Detection Limit

----End of Report----

Verified By


 Technical Manager
 (Vikas Kumar)

Authorized By


 Quality Manager
 (Dr. Abhishek Kumar Singh)


TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Steel Authority of India limited, Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha	Test Report No.	ECO/LAB/DW/0088/0376/08/2025
		Issue Date of Test Report	05.10.2025
Type of Sample	Drinking Water		
Sample Registration No.	0088	Name of Location	Karo Guest House Tap Water
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	12.09.2025	Time of Sample Collection	-
Date of Sample Receipt	15.09.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	15.09.2025	End Date of Analysis	30.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0376/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	6.86	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	<5	-	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	0.05 -10	0.14	1	1.5
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	5-100	<5	45	No Relax
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	0.01-2	<0.01	0.01	0.05
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 .C	0.05-20	<0.05	-	-
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03 2-F	0.02-50	0.12	0.3	No Relax
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-5	<0.05	0.05	1.5
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.02-50	<0.02	5.0	15.0
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 Cra B	0.05 - 10	<0.001	0.001	0.002
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-10	<0.05	0.05	No Relax
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	0.001	No Relax
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.1-5.0	<0.1	0.1	0.3
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.002-2	<0.002	0.003	No Relax
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.02	0.02	No Relax
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	2 -1000	<2	-	-
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	1 -1000	<1	-	-
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	2.5-1000	<5	-	-
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.5-10	<0.5	0.2	No Relax
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.01-1	<0.01	0.01	No Relax
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.
- BDL- Below Detection Limit

----End of Report----

Verified By

Technical Manager
(Vikas Kumar)

Authorized By

Quality Manager
(Dr. Abhishek Kumar Singh)



TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Steel Authority of India limited, Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha	Test Report No.	ECO/LAB/WW/0088/0384/08/2025
Type of Sample	Waste Water	Issue Date of Test Report	05.10.2025
Sample Registration No.	0088	Name of Location	Oil Catch Pit Water Bottom Garbage
Sampling Method	APHA 24 th Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	12.09.2025	Time of Sample Collection	-
Date of Sample Receipt	15.09.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	15.09.2025	End Date of Analysis	30.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C Humidity: 53%	Sample Quantity	As per Requirement
		Sample ID Code	ECO/LAB/0385/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	GSR 422 (E) Desirable Limit
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	6.42	5.5-9.0
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	48.0	100.0
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	1 -1000	38.0	250.0
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	3.6	30.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	2.5-1000	<2.5	10.0
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A.C	0.05 -10	0.12	2.0
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B,A,C	5-100	5.86	-
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.01-2	0.12	-
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.05-20	<0.01	0.2
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.300 CRA	0.02-50	<0.05	2.0
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-5	<0.05	3.0
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-50	<0.02	5.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05 - 10	<0.05	1.0
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.05-10	<0.05	2.0
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.02	3.0
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5.0	<0.001	0.01
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.1	-
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.002	2.0
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	4.0	-
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23 rd Ed: 2017	0.02-10	<0.02	0.2

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.**Note:**

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----**Verified By**

(Signature)
Technical Manager
(Vikas Kumar)

Authorized By

(Signature)
Quality Manager
(Dr. Abhishek Kumar Singh)



TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Steel Authority of India limited, Bolani Ores Mines , At/P.O: Bolani , Dist. Keonjhar , Odisha	Test Report No.	ECO/LAB/WW/0088/0386/08/2025
		Issue Date of Test Report	05.10.2025
Type of Sample	Waste Water		
Sample Registration No.	0088	Name of Location	Oil Catch pit water G-Area
Sampling Method	APHA 24 th Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	12.09.2025	Time of Sample Collection	-
Date of Sample Receipt	15.09.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	15.09.2025	End Date of Analysis	30.09.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0386/08/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	GSR 422 (E)
						Desirable Limit
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	6.80	5.5-9.0
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	42.0	100.0
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	1 -1000	28.0	250.0
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	3.4	30.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	2.5-1000	<2.5	10.0
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A.C	0.05 -10	0.14	2.0
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B,A,C	5-100	7.04	-
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.01-2	0.24	-
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.05-20	<0.01	0.2
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.300 CRA	0.02-50	<0.05	2.0
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-5	<0.05	3.0
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-50	<0.02	5.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05 - 10	<0.05	1.0
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.05-10	<0.05	2.0
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.02	3.0
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5.0	<0.001	0.01
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.1	-
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.002	2.0
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	3.9	-
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23 rd Ed: 2017	0.02-10	<0.02	0.2

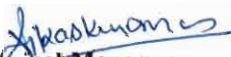
Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By


Technical Manager
(Vikas Kumar)

Authorized By


Quality Manager
(Dr. Abhishek Kumar Singh)



3.3 Surface/Effluent/Drinking Water Quality:

As per the guideline of CPCB, the following criteria shall be taken into consideration for use of the surface water bodies. Reports below shows the surface water quality analysis results at identified locations near the ML area.

Designated-Best-Use	Class of water	Criteria
Drinking Water Source without conventional treatment but after disinfection	A	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 50 or less pH between 6.5 and 8.5 Dissolved Oxygen 6mg/l or more Biochemical Oxygen Demand 5 days 20C 2mg/l or less
Outdoor bathing (Organized)	B	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 500 or less pH between 6.5 and 8.5 Dissolved Oxygen 5mg/l or more Biochemical Oxygen Demand 5 days 20C 3mg/l or less
Drinking water source after conventional treatment and disinfection	C	<ul style="list-style-type: none"> Total Coliforms Organism MPN/100ml shall be 5000 or less pH between 6 to 9 Dissolved Oxygen 4mg/l or more Biochemical Oxygen Demand 5 days 20C 3mg/l or less
Propagation of Wild life and Fisheries	D	<ul style="list-style-type: none"> pH between 6.5 to 8.5 Dissolved Oxygen 4mg/l or more Free Ammonia (as N) 1.2 mg/l or less
Irrigation, Industrial Cooling, Controlled Waste disposal	E	<ul style="list-style-type: none"> pH between 6.0 to 8.5 Electrical Conductivity at 25C micro mhos/cm Max. 2250 Sodium absorption Ratio Max. 26 Boron Max. 2mg/l
	Below-E	Not Meeting A, B, C, D & E Criteria

2.3.1 Surface Water Quality:

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0089/0387/10/2025
		Issue Date of Test Report	05.11.2025
Type of Sample	Surface Water		
Sample Registration No.	0089	Name of Location	Karo Near Lease Boundary at Linture Village
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	04.10.2025	Time of Sample Collection	-
Date of Sample Receipt	06.10.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	06.10.2025	End Date of Analysis	15.10.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0387/10/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.12	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	20.0	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	1 -1000	18.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	2.4	3.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	2.5-1000	<0.1	0.1
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A.C	0.05 -10	0.15	1.5
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B	5-100	<5	50
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-50	0.28	3.0
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.01-2	0.04	0.2
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 CRA,B	0.05-20	<0.05	0.05
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-5	0.16	1.5
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02 -50	0.21	15.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05-10	<0.05	0.005
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.05-10	<0.05	-
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	-
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	-
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5	<0.1	-
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.002	0.01
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	-
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By


Technical Manager

Authorized By


Quality Manager


TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0088/0388/10/2025
		Issue Date of Test Report	05.11.2025
Type of Sample	Surface Water		
Sample Registration No.	0089	Name of Location	Jhikaria Nalla before Joining Karo River
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	04.10.2025	Time of Sample Collection	-
Date of Sample Receipt	06.10.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	06.10.2025	End Date of Analysis	15.10.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0388/10/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.37	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	22.0	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	1 -1000	26.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	2.4	3.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	2.5-1000	<0.10	0.1
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A.C	0.05 -10	0.29	1.5
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B	5-100	5.21	50
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-50	0.31	3.0
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.01-2	<0.01	0.2
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 CRA,B	0.05-20	<0.05	0.05
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-5	0.06	1.5
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02 -50	0.12	15.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05-10	<0.05	0.005
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.05-10	<0.05	-
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	-
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	-
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5	<0.1	-
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.002	0.01
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	-
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By


Technical Manager

Authorized By


Quality Manager


TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0089/0389/10/2025
		Issue Date of Test Report	05.11.2025
Type of Sample	Surface Water		
Sample Registration No.	0089	Name of Location	Panpash Nallah
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	04.10.2025	Time of Sample Collection	-
Date of Sample Receipt	06.10.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	06.10.2025	End Date of Analysis	15.10.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0389/10/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.27	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	28.0	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A,C	1 -1000	27.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	2.5	3.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	2.5-1000	<0.10	0.1
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A.C	0.05 -10	0.27	1.5
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B	5-100	<5	50
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-50	0.22	3.0
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.01-2	<0.01	0.2
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 CRA,B	0.05-20	<0.05	0.05
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-5	0.08	1.5
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02 -50	0.14	15.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05-10	<0.05	0.005
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.05-10	<0.05	-
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	-
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	-
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5	<0.1	-
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.02	0.1
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.002	0.01
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	-
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By


Technical Manager

Authorized By


Quality Manager


TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/SW/0089/0390/10/2025
		Issue Date of Test Report	05.11.2025
Type of Sample	Surface Water		
Sample Registration No.	0089	Name of Location	Karo River Intake
Sampling Method	APHA 23 rd Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	04.10.2025	Time of Sample Collection	-
Date of Sample Receipt	06.10.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	06.10.2025	End Date of Analysis	15.10.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0390/10/2025

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards As Is-2296(C)
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.44	6.5-8.5
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	28.0	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A,C	1 -1000	30.0	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	2.5	3.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	2.5-1000	<0.10	0.1
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A.C	0.05 -10	0.47	1.5
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B	5-100	5.42	50
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-50	0.21	3.0
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.01-2	0.06	0.2
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 CRA,B	0.05-20	<0.05	0.05
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-5	<0.05	1.5
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02 -50	0.18	15.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05-10	<0.05	0.005
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.05-10	<0.05	-
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	-
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	-
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5	<0.1	-
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.002	0.01
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.5	-
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below Detection Limit

----End of Report----

Verified By


Technical Manager

Authorized By


Quality Manager
B-118,
Second Floor,
Sector-14, Alipah,
Dist. ...

2.3.2 Effluent Waste Water Quality:

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/WW/0089/0393/10/2025
		Issue Date of Test Report	05.11.2025
Type of Sample	Waste Water		
Sample Registration No.	0089	Name of Location	Oil Catch Pit Water Bottom Garbage
Sampling Method	APHA 24 th Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	04.10.2025	Time of Sample Collection	-
Date of Sample Receipt	06.10.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	06.10.2025	End Date of Analysis	15.10.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0393/10/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	GSR 422 (E)
						Desirable Limit
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	6.67	5.5-9.0
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	40.0	100.0
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	1 -1000	32.0	250.0
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	3.3	30.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A,B,D	0.05 -10	<0.05	2.0
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A.C	0.5-10	0.20	0.2
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B,A,C	0.02-50	5.44	-
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-20	0.22	2.0
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	5-100	<5	-
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.300 CRA	0.01-2	<0.01	0.2
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-5	<0.05	3.0
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-50	0.22	5.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05 - 10	<0.05	1.0
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.05-10	<0.05	2.0
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.02	3.0
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	0.01
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5	<0.1	-
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.002	2.0
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	2.5-1000	2.8	10
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.2

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.
- BDL- Below Detection Limit

-----End of Report-----

Verified By


Technical Manager

Authorized By


Quality Manager


TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/WW/0089/0394/10/2025
		Issue Date of Test Report	05.11.2025
Type of Sample	Waste Water		
Sample Registration No.	0089	Name of Location	Oil Catch pit water G-Area
Sampling Method	APHA 24 th Ed.:2023, 1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	04.10.2025	Time of Sample Collection	-
Date of Sample Receipt	06.10.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	06.10.2025	End Date of Analysis	15.10.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0394/10/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	GSR 422 (E) Desirable Limit
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	6.88	5.5-9.0
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	34.0	100.0
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	1 -1000	24.0	250.0
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	3.0	30.0
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	0.05 -10	<0.05	2.0
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 A.C	0.5-10	0.14	0.2
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03,B,A,C	0.02-50	6.02	-
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-20	0.20	2.0
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	5-100	<5	-
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.300 CRA	0.01-2	<0.01	0.2
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-5	<0.05	3.0
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-50	<0.02	5.0
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	0.05 - 10	<0.05	1.0
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.05-10	<0.05	2.0
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-10	<0.02	3.0
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	0.01
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5	<0.1	-
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.01	0.1
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.002-2	<0.002	2.0
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	2.5-1000	3.4	10
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.2

Statement of Conformity: The above tested parameters confirm as per GSR 422 (E) limits for above tested parameters.

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.
- BDL- Below Detection Limit

----End of Report----

Verified By


Technical Manager

Authorized By


Quality Manager


2.3.3 Drinking Water Quality:

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bolani Ore Mines (SAIL)	Test Report No.	ECO/LAB/DW/0089/0391/10/2025
		Issue Date of Test Report	05.11.2025
Type of Sample	Drinking Water		
Sample Registration No.	0089	Name of Location	Mount Club Tap Water
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	04.10.2025	Time of Sample Collection	-
Date of Sample Receipt	06.10.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	06.10.2025	End Date of Analysis	15.10.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0391/10/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.06	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	<5	-	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	1 -1000	<1	-	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	<1	-	-
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	2.5-1000	<2.5	-	-
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 .C	0.05 -10	0.08	1.0	1.5
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03 2-F	5-100	<5	45.0	No Relax
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-50	<0.05	0.3	No Relax
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.01-2	<0.1	0.01	0.05
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 Cra B	0.05-5	<0.05	-	-
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-5	<0.05	0.05	1.5
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02 - 50	<0.02	5.0	15
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	1-10	<0.1	0.007	0.007
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.05-10	<0.05	0.05	No Relax
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	0.001	No Relax
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.007-1	<0.007	0.007	No Relax
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5	<0.1	0.10	0.30
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.01	0.05	No Relax
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.007-2	<0.007	0.007	No Relax
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.05	0.20	1.0
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note-

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below Detection Limit

----End of Report----

Verified By


Technical Manager

Authorized By


Quality Manager
B-11, Second Floor,
Sector-11, Aligarh,
Dist. Aligarh

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Boloni Ore Mines (SAIL)	Test Report No.	ECO/LAB/DW/0089/0392/10/2025
		Issue Date of Test Report	05.11.2025
Type of Sample	Drinking Water		
Sample Registration No.	0089	Name of Location	Karo Guest House Tap Water
Sampling Method	APHA, 23rd Ed.:2017,1060 A+B	Sample Collected By	EMPL Representative
Date of Sample Collection	04.10.2025	Time of Sample Collection	-
Date of Sample Receipt	06.10.2025	Time of Sample Receipt	05:40 PM
Start Date of Analysis	06.10.2025	End Date of Analysis	15.10.2025
Laboratory Environmental Condition	Temperature: 27 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 53%	Sample ID Code	ECO/LAB/0392/10/2025

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	pH	-	APHA 24 th ED.4500H A,B	2 - 12	7.04	6.5-8.5	No Relax
2.	Total Suspended Solids as TSS	mg/l	APHA, 24th Edition 2540- D	5 -5000	<5	-	-
3.	Chemical Oxygen Demand as COD	mg/l	APHA 24 th ED.5220 A.C	1 -1000	<1	-	-
4.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	mg/l	APHA 24 th ED.5210 A,B	1 -1000	<1	-	-
5.	Oil & Grease as O&G	mg/l	APHA 24 th ED.5520A.B.D	2.5-1000	<0.01	0.01	0.05
6.	Fluoride as F	mg/l	APHA 24th Ed.: 4500 .C	0.05-10	<0.05	1.0	1.5
7.	Nitrate nitrogen	mg/l	APHA 24 th Ed.: 4500-N03 2-F	5-100	<5	45.0	No Relax
8.	Iron as Fe	mg/l	APHA 3125 B 23 rd Ed:2017	0.05-50	0.08	0.3	No Relax
9.	Arsenic as As	mg/l	APHA 24 th Ed.3125 A,B-ICPMS	0.01-2	<0.01	0.01	0.05
10.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA 24 th Ed.3500 Cra B	0.05-5	<0.05	-	-
11.	Copper as Cu	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.05-5	<0.05	0.05	1.5
12.	Zinc as Zn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.02-50	<0.02	5.0	15
13.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA 24th Ed. 5530 A,C	1-10	<0.1	0.007	0.007
14.	Sulphide as S ²⁻	mg/l	APHA 24th Ed.4500 S2-F	0.05-10	<0.05	0.05	No Relax
15.	Nickel as Ni	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.001-1	<0.001	0.001	No Relax
16.	Mercury as Hg	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.007-1	<0.007	0.007	No Relax
17.	Manganese as Mn	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.1-5	<0.1	0.10	0.30
18.	Lead as Pb	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.01-1	<0.01	0.05	No Relax
19.	Cadmium as Cd	mg/l	APHA 24thEd.3125 A,B-ICPMS	0.007-2	<0.007	0.007	No Relax
20.	Total residual chlorine	mg/l	IS 3025 (Part 26, Clause No.5)	0.5-10	<0.05	0.20	1.0
21.	Cyanide as Cn ⁻	mg/l	APHA 4500 CN- (K) 23rd Ed: 2017	0.02-10	<0.02	0.05	No Relax

Statement of Conformity: The above tested parameters confirm as per IS 10500:2012(Reaff:2018).

Note:

- Test results relate to the items sampled & tested.
- Test report shall not be reproduced except in full without approval of the laboratory.
- The test samples will be disposed of after one Month from the date of issue of test report.
- BDL- Below Detection Limit

----End of Report----

Verified By


Technical Manager

Authorized By


Quality Manager


ANNEXURE-VII

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/10

NAME & ADDRESS OF CUSTOMER:	SAIL-RSP Bolani Ores Mines	Test Report No.	ECOLAB/GWL/092/288/07/2022
		Issue Date of Test Report	12.07.2025
Type of Sample	Ground Water Level Monitoring		
Sample Registration No.	092		
Sampling Method	As per Reference Method	Sample Collected By	Ecomen Lab Team
Date of Sample Monitoring	10.07.2025	Time of Sample Collection	11:10 AM
Laboratory Environmental Condition	Temperature: 25 ± 5 °C	Sample Quantity	As per Requirement
	Humidity: 30-60 % RH	Sample ID Code	ECOLAB/288/07/2025

Ground Water Level Report

S. No.	Name of Location	Unit	Ground Water Level (in Meter)
1.	Bolani Basti	Meter	0.53
2.	Gouda Basti Bolani	Meter	0.80
3.	Balagoda (1)	Meter	1.50
4.	Balagoda (2)	Meter	1.70
5.	Balagoda (3)	Meter	1.93
6.	Haramatha Nayak Basti	Meter	1.00
7.	Lasarda Gagarai Sahi	Meter	3.00
8.	Pacheri	Meter	3.50
9.	Tatiba	Meter	0.10

Statement of Conformity: The above tested parameters results are related to the sample tested.

Verified By


 Technical Manager

Authorized By


 Quality Manager