



स्टील अथॉरिटी ऑफ इण्डिया लिमिटेड
STEEL AUTHORITY OF INDIA LIMITED
रॉ मटेरियल्स डिवीजन
RAW MATERIALS DIVISION
बोलानी अयस्क खदान
BOLANI ORES MINES

Ref No: - BOM/ENV/6.9/HD-2911

Date:-29/11/2017

To,

Additional Principal Chief Conservator of Forests (C),
Ministry of Environment, Forest and Climate Change,
Regional Office (EZ),
A/3, Chandersekharpur,
Bhubaneswar – 751023

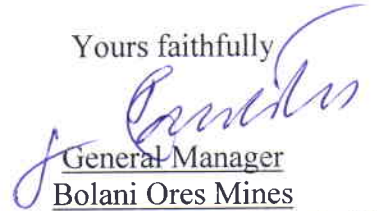
Sub: Six monthly status of compliance to the conditions stipulated in the Environmental Clearance granted by MoEFCC for 15000 TPA Manganese Ore production from 6.90 sq. Miles ML vide letter no. J-11015/396/2008-IA.II(M) dated 21/12/2012 for the period APR'17 – SEP'17

Sir,

Please find enclosed herewith the Six monthly compliance report for the period APR'17 – SEP'17 with respect to the conditions stipulated by GoI, MoEF, New Delhi, in the Environmental Clearance grant order of Bolani Ores 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) dated 21/12/2012. The report also contains the updated status of the environmental monitoring reports pertaining to the above period.

Thank you,

Yours faithfully,


General Manager
Bolani Ores Mines

महाप्रबंधक (खनन) / General Manager (Mines)
सेल - आर एम डी - बोलानी-अयस्क खदान
SAIL-RMD-Bolani Ores Mines
बोलानी-758 037, क्योङ्गर, ओड़ीसा
Bolani-758 037, Keonjhar, Odisha

Encl: As above

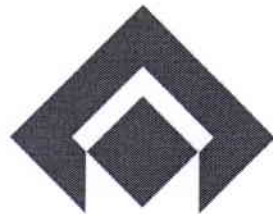
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1. Director, IA Division, MoEF&CC, GOI, Indira Paryavaran Bhavan, Aliganj, Jor Bagh Road, New Delhi - 110 003.
2. In-charge, Eastern Zone, CPCB, Southern Conclave, Block 502, 5th & 6th Floors, 1582 Rajdanga Main Road, Kolkata - 700 107 (W. B.)
3. The Member Secretary, State Pollution Control Board, Paribesh Bhawan, A/118, Nilkantha Naga, Unit – VIII, Bhubaneswar – 751 012, Odisha

Six Monthly
COMPLIANCE REPORT
OF
ENVIRONMENTAL CLEARANCE CONDITIONS
(Grant Order no: J-11015/396/2008-IA.II(M) dated 21/12/2012)

OF
BOLANI ORES MINES (6.90 Sq Miles ML)
In Keonjhar District of Odisha

For the Period April'17 - September'17



STEEL AUTHORITY OF INDIA LIMITED
RAW MATERIALS DIVISION
BOLANI ORES MINES
BOLANI- 758037

SL. NO.	CONDITION	COMPLIANCE
A.	SPECIFIC CONDITIONS	
i.	Environmental Clearance is subject to obtaining clearance under the Wildlife (Protection) Act, 1972 from the competent authority, as applicable.	Not Applicable as the Provision of Wildlife (Protection) ACT 1972 is not attracted to the Project.
ii.	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 hydrogeological study shall be carried out.	The Mining operations in this ML have not been commenced yet. In case of working below the ground water table, a detailed hydrogeological study will be carried out and prior approval of the Ministry of Environment & Forest and Central Ground Water Authority will be obtained for working below Ground Water Table.
iii.	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.	<p>The Mining operations in this ML have not started yet. Mitigation measures are regularly implemented to control the RSPM levels. On production of ROM from this lease, total dispatch will be through rail route. As such, in order to improve the RSPM quality, SAIL-Bolani Ore Mines has completed the implementation of following mitigation measures :</p> <ul style="list-style-type: none"> (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) Dry Fog Dust suppression system has been installed in the 600 TPH Crushing & Screening Plant (d) In addition to water sprinkling on haul roads, water sprinkling facility has been extended to the Public roads outside this lease. (e) Fixed water sprinkling system has been installed in the 600 TPH areas. (f) During ROM production from this ML, additional water sprinkling measures as planned in EMP will be undertaken. <p>Regular Environmental Audits are part of the Environmental Management System (EMS) implemented at Bolani Ore Mines, which is certified under ISO-14001:2004 standard. These audits check the 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.</p>

SL. NO.	CONDITION	COMPLIANCE
	Management plan for conservation of flora and fauna so prepared by the State Government. The amount so contributed shall be included in the project cost. A copy of action plan may be submitted to the Ministry and its Regional Office, Bhubaneswar within three months.	approval of Chief Wild Life Warden.
x.	The critical parameters such as RSPM (Particulate matter with size less than 10 micron i.e. PM 10 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.	<p>The Mining operation in this ML has not started yet. However, the critical parameters such as PM₁₀, NO_x etc. are regularly monitored in the ambient air within the impact zone. Action has been taken for installation of 4 (Four) nos) Continuous Ambient Air Quality Monitoring System (CAAQMS) in core and buffer zones of this lease for measurement 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.</p> <p>The quality of discharged water is also regularly monitored for parameters like TDS, DO, PH and Total Suspended Solids (TSS). The monitored data are enclosed in the six monthly compliance reports which are uploaded on the website of SAIL. The monitored data are also displayed on an electronic display board near the main entry gate which is in public domain. Reports of the same are enclosed as Annexure-I(A) & I(B).</p>
B.	GENERAL CONDITIONS	
i.	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests	The Mining operation in this ML has not started yet. However, There will be no change in Mining technology or scope of work, other than that which has been prescribed in Mine Plan/Mining Scheme. Prior approval from MoEF&CC shall be sought to change Mining technology or scope of working.
ii.	No change in the calendar plan including excavation, quantum of mineral iron ore and waste should be made.	No change in the calendar plan including excavation, quantum of mineral iron ore and waste will be made.
iii.	The project proponent shall obtain Consent to establish from the State Pollution Control Board, Orissa and effectively implement all the conditions stipulated there in.	Consent to Establish has been obtained vide Order no. 23403/Ind-II-NOC-5374 dated 21/12/2013. The conditions are effectively implemented and a compliance report has already been submitted to OSPCB for considering grant of consent to operate. The Mining operation in this ML has not started yet.
iv.	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.	Not applicable at present. However, Final Mine Closure plan along with details of Corpus fund will be submitted to the Ministry 5 years in advance of final Mine closure.

SL. NO.	CONDITION	COMPLIANCE
		<p>Meanwhile, Individual septic tanks have been provided in all quarters and office locations. 03(Three) nos. of ETPs (oil and grease catchtraps) have been provided at mechanical workshops and equipment washing junctions to collect and treat workshop effluent. Following activities have been taken up during Apr'17 to Sep'17 for better handling of domestic waste within BOM:</p> <p>i. Boundary wall & garland drain have been constructed around domestic garbage yard at a cost of Rs 14.10 lakhs.</p>
x.	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.	<p>All newly appointed workers undergo a comprehensive medical examination (Pre-Employment Medical Examination) and subsequently a Periodical Medical Examination (PME) at regular intervals. All workers undergo a PME every 5 years; however for workers whose age is >45 years the PME is done every 3 years. All contractual workers also undergo medical examination. The findings are maintained in each worker's individual medical record maintained throughout his service. These records are manually maintained and also computerized. The above tests are carried out at the Bolani Mines Hospital. A three tier health monitoring program is in vogue the hospital. The mine's hospital has an Occupational Health Department O.P.D. run by Occupational Health Physician. The mine hospital is a 50 bedded multi-specialty hospital with facilities to handle major and minor surgeries and a casualty department.</p>
xi.	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.	<p>Most of the labours engaged in the construction activity belong to nearby villages. However, provisions have also been made, as and when required, for the housing of construction labour in adjacent to the construction sites in non-forest lands on temporary basis till completion of the project. Infrastructure and facilities, available at Bolani such as safe drinking water, medical health care etc. are enjoyed by the labors.</p>
xii.	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 Ministry of Environment and Forests and its Regional Office, Bhubaneswar, Central Ground Water Authority and Regional	<p>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 in compliance reports. The ground water level data is attached as Annexure-II.</p>

SL. NO.	CONDITION	COMPLIANCE
xv.	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. PM ₁₀) 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.	Four nos. of Ambient Air quality monitoring locations have been fixed in core zone and buffer zone (2 nos. of common for the adjoining 5.10 sq. miles ML of SAIL) , in consultation with State Pollution Control Board , where RSPM (PM ₁₀) including other parameters are monitored. The monitoring reports are attached as Annexure-I(A) . Action has been taken for installation of 4 (Four) nos) Continuous Ambient Air Quality Monitoring System (CAAQMS) in core and buffer zones of this lease for measurement critical parameters such as RSPM (Particulate matter with size less than 10 micron i.e. PM 10 and NO _x in the ambient air within the impact zone .
xvi.	Data on Ambient Air Quality [RSPM (PM ₁₀) and NO _x] 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.	At present, the data on ambient air quality (RSPM, SO ₂ , NO _x & CO) is regularly submitted on six-monthly basis in the compliance reports of the same (enclosed as Annexure – I (A)). After the installation of CAAQMS system , the data on ambient air quality (PM 10,PM 2.5, SO ₂ , NO _x & CO) will be automatically uploaded to OSPCB server .
xvii.	The top soil, if any, shall temporarily be stored at earmarked site only and should not be kept unutilized for a period more than three years. The topsoil should be used for land reclamation and plantation.	The Mining operations in this ML have not started. However, The top soil generated (after commencement of mining operation) will temporarily be stored at earmarked site and utilized within three years of storing.
xviii.	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.	The Mining operations in this ML have not been started. However, all workers deployed in the field/loading plant areas are provided with necessary PME kit that includes Ear plugs/muffs.
xix.	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.	The Mining operations in this ML have not been started. However the Same is Noted for Compliance.
xx.	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.	An Environment Management Cell(EMC) has been established which is functioning for both 5.10 sq. miles ML and 6.90 sq. miles ML of Bolani Ores Mines, headed by Asst. General Manager, who directly reports to the Mines Manager of Bolani Ores Mines in connection with implementation of environment and forest related Statutory stipulations for compliances . Bolani Ores Mines has implemented Environment Management System (EMS) as per for ISO-14001:2004 standard according to which, a senior person has

SL. NO.	CONDITION	COMPLIANCE
	Parisad/Municipal Corporation, Urban Local Body and the local NGO, if any, from whom suggestion/ representation has been received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent, The State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry Center and Collector's office/ Tehsildar's office for 30 days.	received while processing the proposal.
xxvi.	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.	Noted for Compliance.
xxvii.	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.	Environment Statement for 2015-16 of Bolani Ores Mines is submitted vide our letter no. GM/ENV/B-2609 Dt.26.09.2016. 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 by e-mail.
xxviii.	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.	Advertisements regarding grant of environmental clearance was published in Odiya daily SAMBADA, Bhubaneswar & Sambalpur Edition on date 27-12-2012 and Business Standard on date 27-12-2012.
8.	The Ministry or any other competent authority may alter /modify the above	Agreed to.

Mitra S. K. Private Limited

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W : www.mitrask.com



Ref. No.BBL/ENV/2017-18/116

Date: 01/09/2017

AMBIENT AIR QUALITY FOR MAY'17 TO JULY'17

LOCATION*	MONTH	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO
Karo Guest House	May'17	89.40	44.40	5.08	24.32	0.44
	June'17	53.00	24.00	4.21	24.84	0.31
	July'17	55.25	29.25	5.13	23.45	0.25
General Office	May'17	81.00	39.67	4.50	22.67	0.38
	June'17	66.50	29.50	4.75	26.76	0.33
	July'17	51.50	26.00	5.70	24.55	0.29

*AAQ monitoring has been carried out in only 02 (two) Locations due to establishment of 04 nos. of CAAQMS stations at Bolani Ores Mines.

Checked by:-

For Mitra S. K. Private Limited

Authorised Signatory

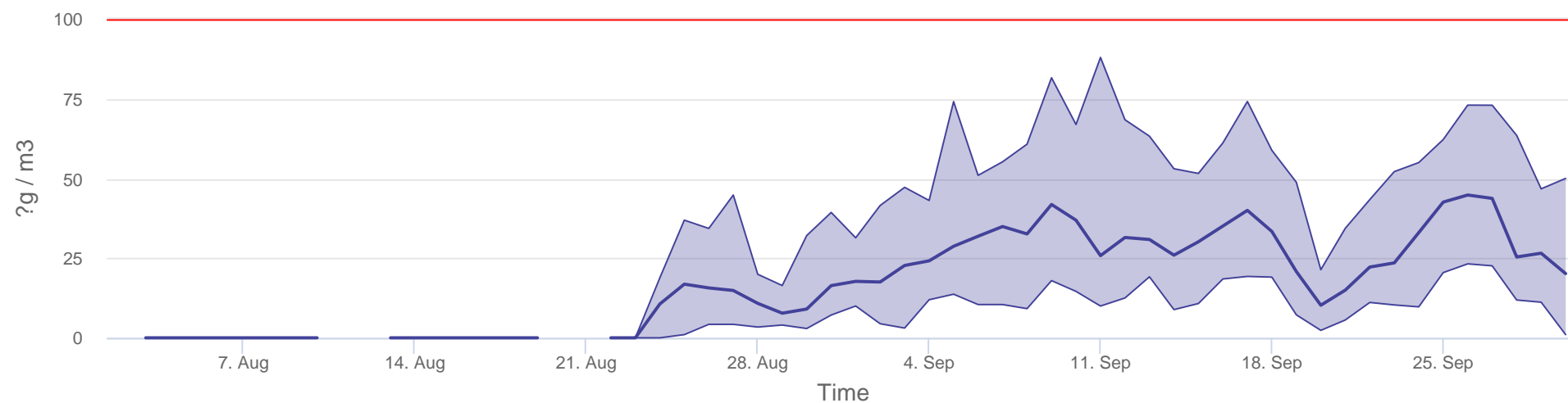


SAIL RMD

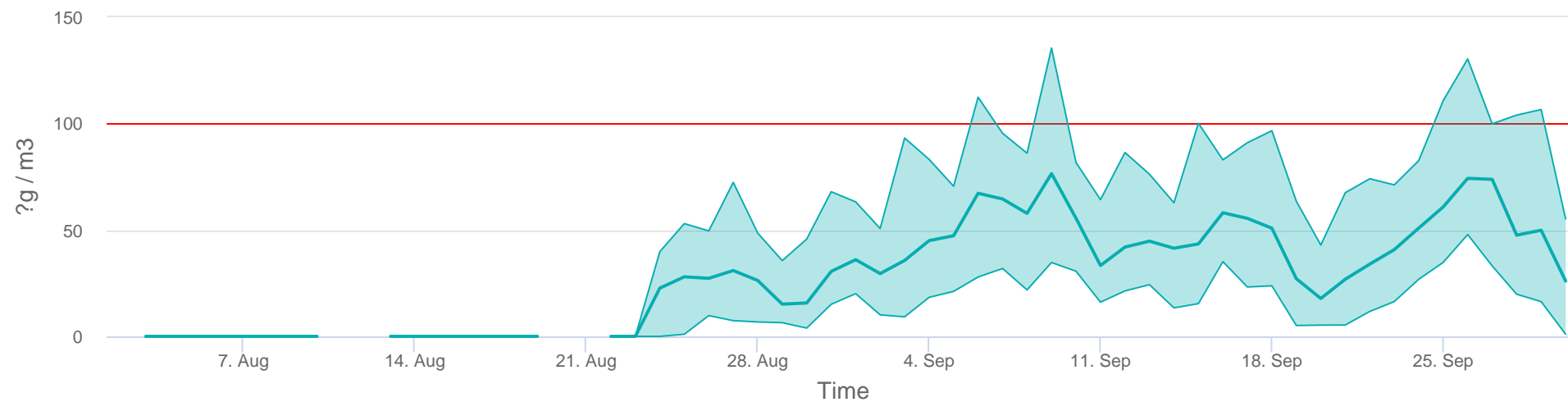
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Upto: 00:00, 30-Sep-2017

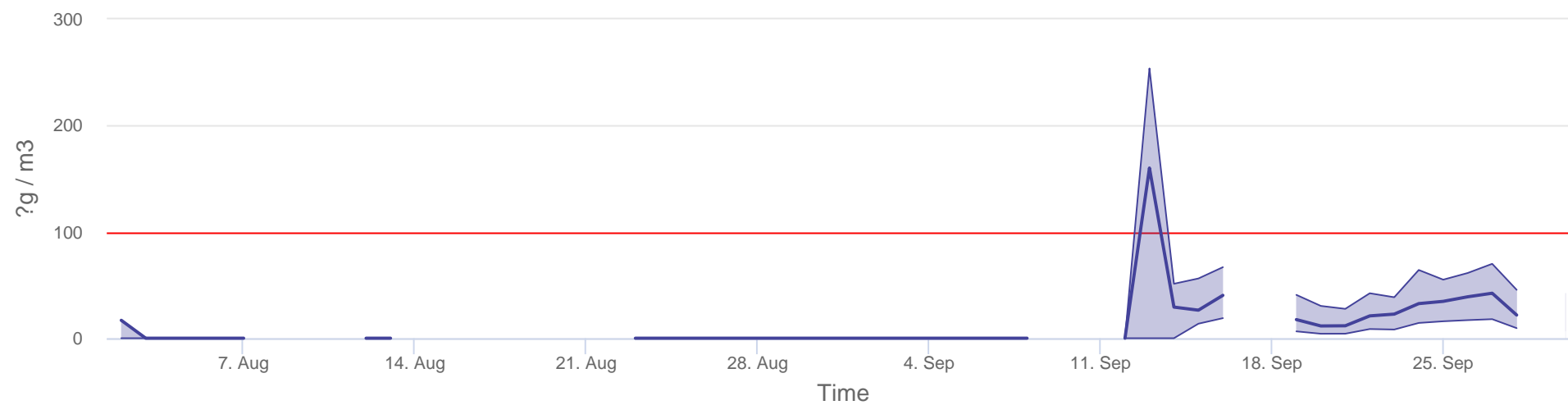
PM2.5 of CISF Colony



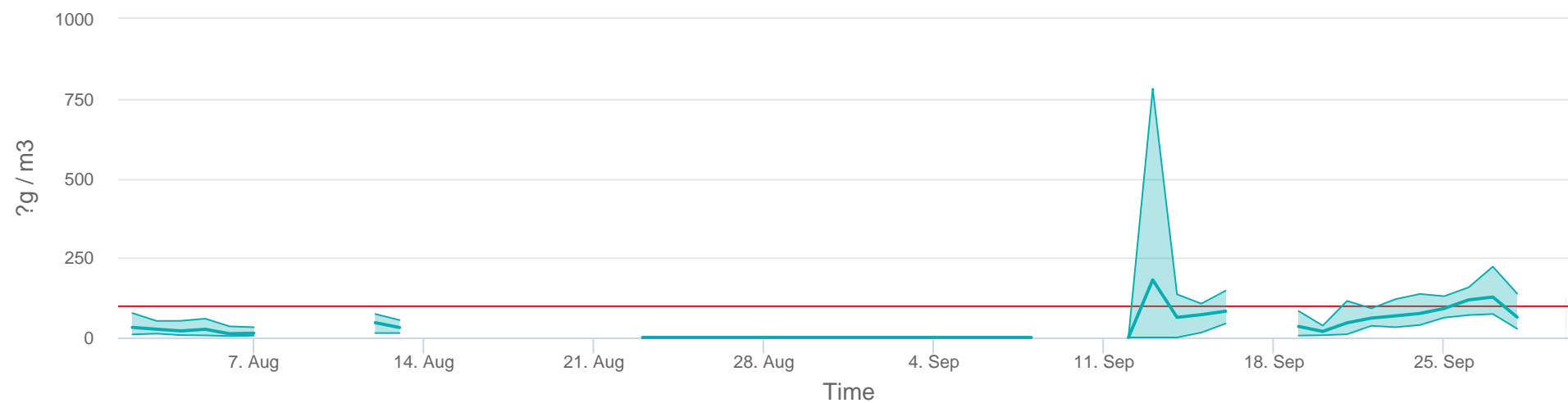
PM10 of CISF Colony



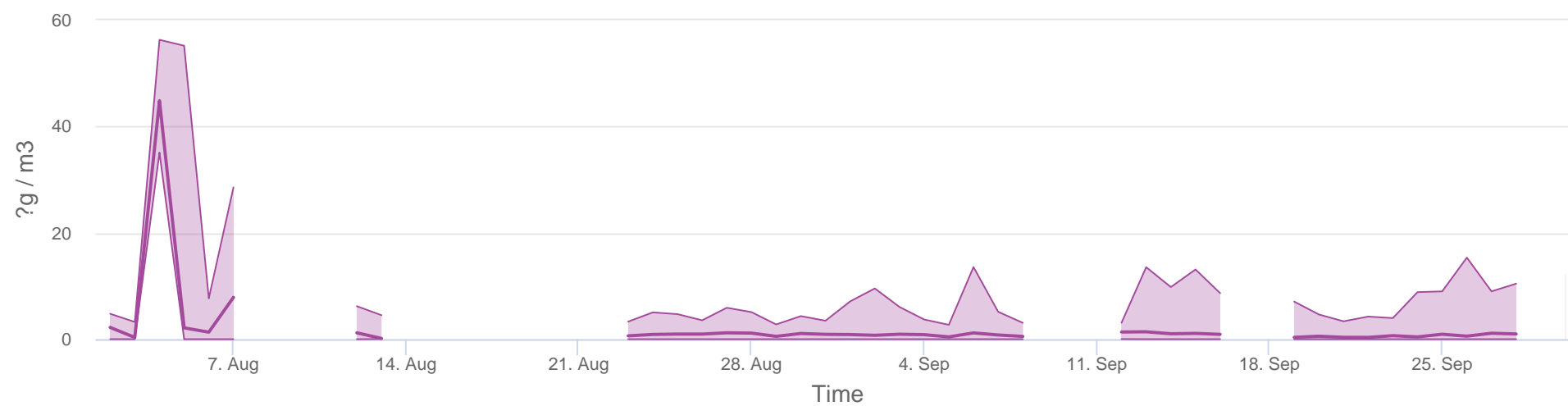
PM2.5 of Campus Store



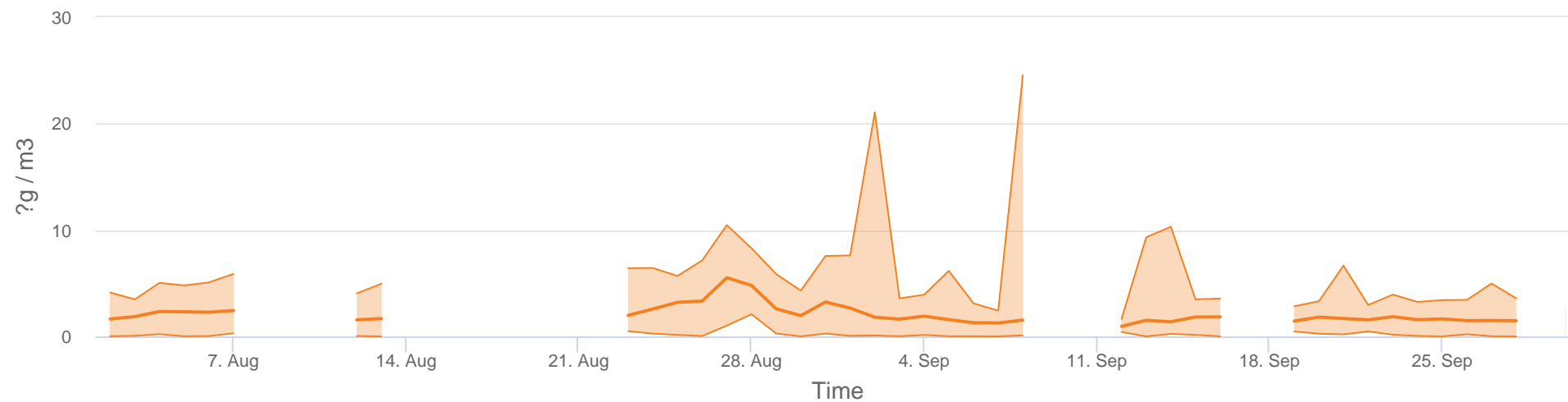
PM10 of Campus Store



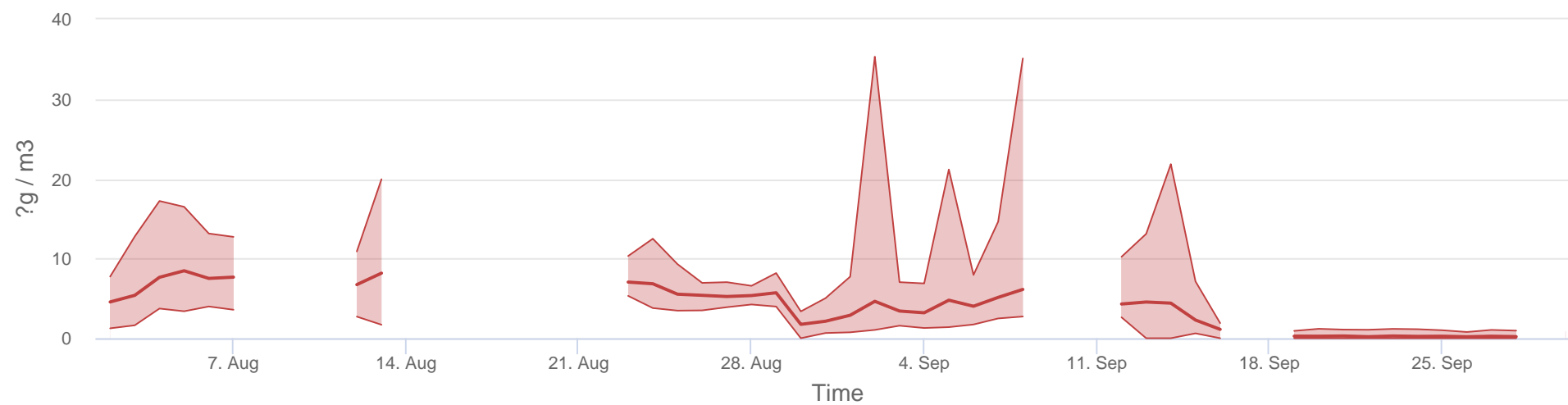
SO2 of Campus Store



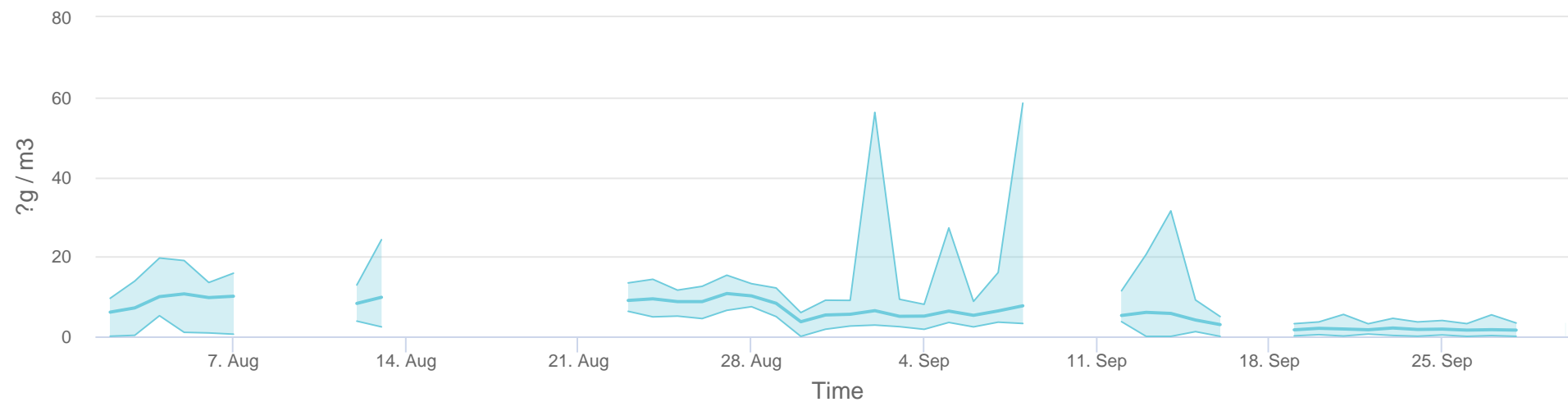
NO of Campus Store



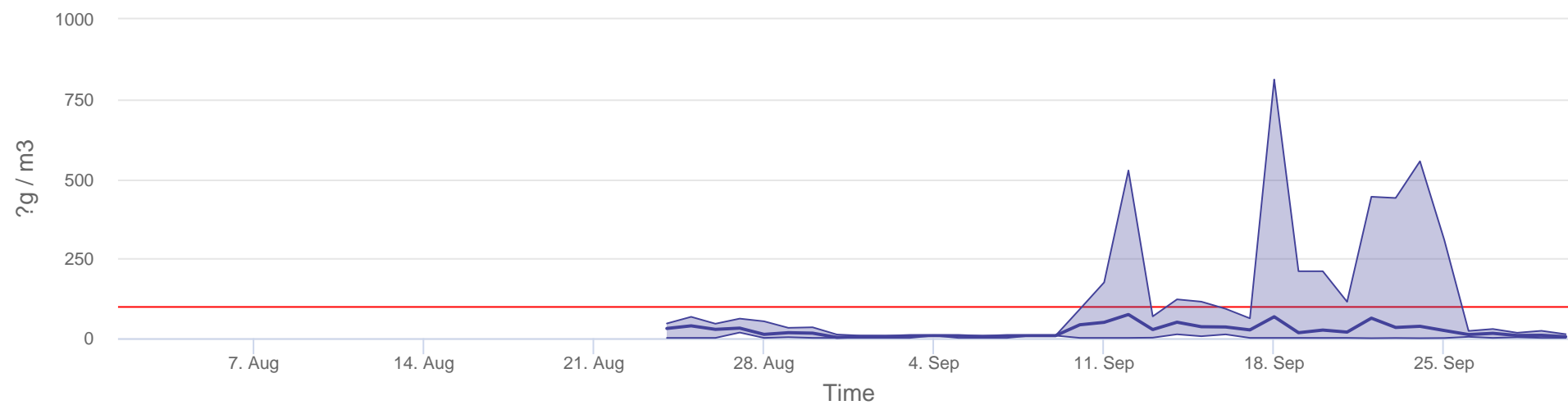
NO2 of Campus Store



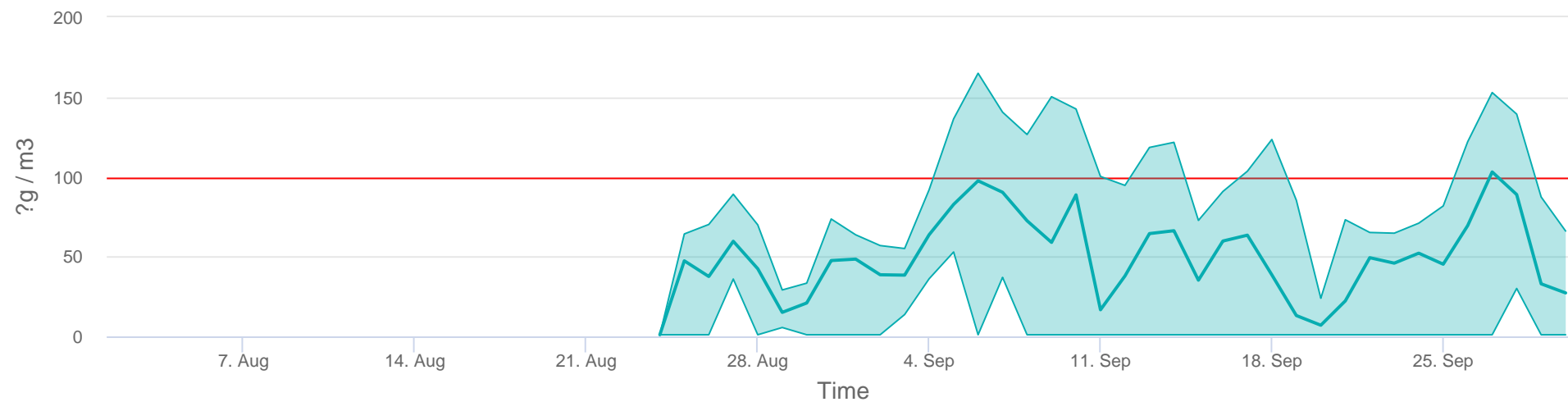
NOx of Campus Store



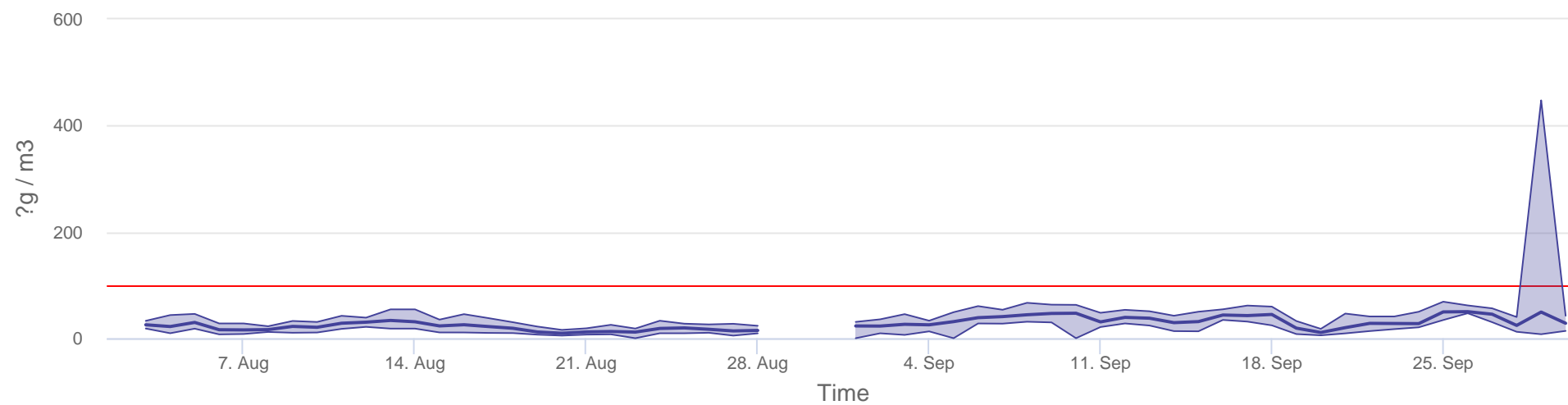
PM2.5 of JNRC



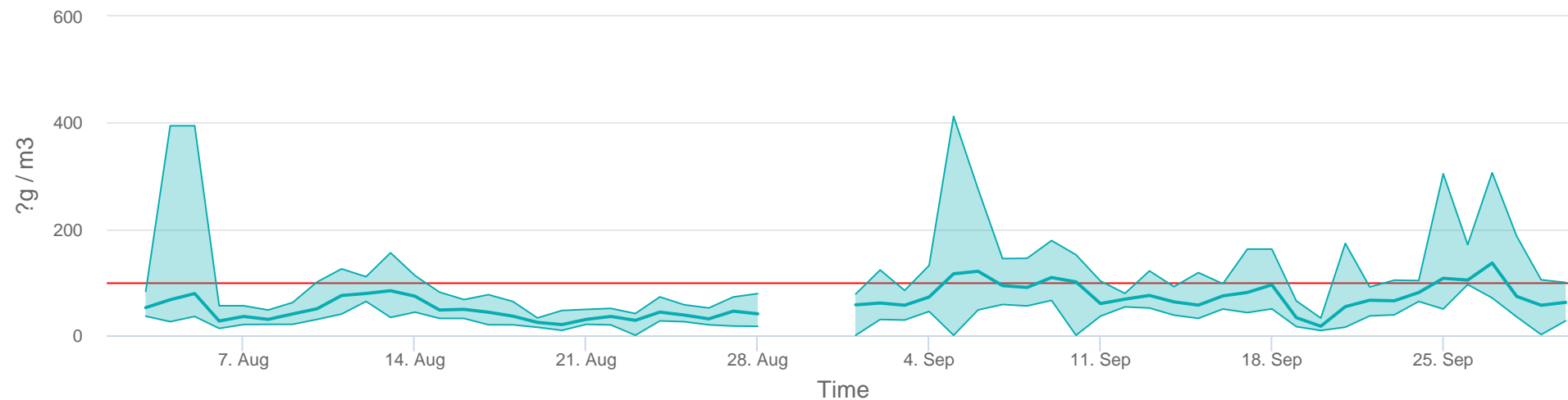
PM10 of JNRC



PM2.5 of Near Karo Bridge



PM10 of Near Karo Bridge



Date & Time	Station	PM _{2.5}			PM ₁₀			SO ₂			NO			NO ₂			NO _x		
hh:mm:ss dd-mm-yyyy		µg / m ³			µg / m ³			µg / m ³			µg / m ³			µg / m ³			µg / m ³		
		Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.
00:00, 01 to 00:00, 02- Aug-2017	CISF Colony	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	16.87	0	16.87	31.66	9.58	76.59	2.22	0.01	4.78	1.63	0.01	4.12	4.55	1.24	7.73	6.07	0.04	9.54
	JNRC	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 02 to 00:00, 03- Aug-2017	CISF Colony	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	0	0	0	25.93	12.01	51.86	0.33	0	3.24	1.86	0.05	3.48	5.38	1.62	12.77	7.14	0.27	13.87
	JNRC	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	25.26	18.21	32.71	51.96	35.86	82.33	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 03 to 00:00, 04- Aug-2017	CISF Colony	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	0	0	0	20.62	7.37	52.23	44.85	35.10	56.30	2.33	0.21	5.03	7.64	3.72	17.21	9.96	5.18	19.64
	JNRC	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	21.98	9.35	43.51	66.86	25.53	394.20	-	-	-	-	-	-	-	-	-	-	-	-

Date & Time	Station	PM _{2.5}			PM ₁₀			SO ₂			NO			NO ₂			NO _x		
00:00, 04 to 00:00, 05-Aug-2017	CISF Colony	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	0	0	0	25.70	6.50	59.10	2.13	0	55.19	2.31	0.01	4.79	8.46	3.38	16.48	10.65	1.01	19.01
	JNRC	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	29.68	17.96	45.73	78.48	35.37	394.20	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 05 to 00:00, 06-Aug-2017	CISF Colony	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	0	0	0	11.74	4.51	34.87	1.32	0	7.68	2.27	0.03	5.07	7.50	3.98	13.13	9.72	0.86	13.50
	JNRC	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	15.93	7.23	27.77	26.80	12.87	55.49	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 06 to 00:00, 07-Aug-2017	CISF Colony	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	0	0	0	13.26	5.62	32.30	7.87	0	28.56	2.43	0.29	5.87	7.66	3.57	12.71	10.06	0.55	15.83
	JNRC	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	15.62	7.93	27.77	35.35	20.18	55.49	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 07 to 00:00, 08-Aug-2017	CISF Colony	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	JNRC	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	16.16	11.74	22.51	29.86	20.50	47.47	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 08 to 00:00, 09-Aug-2017	CISF Colony	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	JNRC	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	22.21	10.26	32.44	40.07	20.54	61.54	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 09 to 00:00, 10-Aug-2017	CISF Colony	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	JNRC	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	20.56	10.72	30.59	49.88	29.82	100.30	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 10 to 00:00, 11-Aug-2017	CISF Colony	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	JNRC	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	28.20	17.56	42.14	74.81	39.88	124.90	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 11 to 00:00, 12-Aug-2017	CISF Colony	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	0	0	0	46.35	13.79	73.70	1.20	0	6.21	1.55	0.03	4.04	6.72	2.71	10.88	8.26	3.82	12.87
	JNRC	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	30.16	21.31	38.71	78.62	63.69	110.10	-	-	-	-	-	-	-	-	-	-	-	-

Date & Time	Station	PM _{2.5}			PM ₁₀			SO ₂			NO			NO ₂			NO _x		
00:00, 12 to 00:00, 13-Aug-2017	CISF Colony	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	0	0	0	31.20	13.79	54.56	0.14	0.03	4.51	1.67	0	4.95	8.16	1.69	19.94	9.80	2.38	24.24
	JNRC	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	33.45	18.05	54.26	83.83	33.55	155.20	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 13 to 00:00, 14-Aug-2017	CISF Colony	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	JNRC	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	30.92	18.07	54.26	73.42	43.47	112.20	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 14 to 00:00, 15-Aug-2017	CISF Colony	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	JNRC	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	23.11	10.84	35.00	47.48	31.73	81.13	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 15 to 00:00, 16-Aug-2017	CISF Colony	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	JNRC	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	25.34	10.79	45.25	48.75	31.63	67.07	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 16 to 00:00, 17-Aug-2017	CISF Colony	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	JNRC	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	21.95	9.94	37.81	43.33	19.74	76.35	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 17 to 00:00, 18-Aug-2017	CISF Colony	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	JNRC	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	18.69	9.62	30.07	35.92	19.62	63.43	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 18 to 00:00, 19-Aug-2017	CISF Colony	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	JNRC	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	11.75	6.69	21.92	24.19	14.97	32.57	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 19 to 00:00, 20-Aug-2017	CISF Colony	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	JNRC	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	9.37	4.91	15.67	20.07	9.20	46.58	-	-	-	-	-	-	-	-	-	-	-	-

Date & Time	Station	PM _{2.5}			PM ₁₀			SO ₂			NO			NO ₂			NO _x		
00:00, 20 to 00:00, 21-Aug-2017	CISF Colony	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	JNRC	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	11.88	6.77	18.62	29.86	20.56	48.68	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 21 to 00:00, 22-Aug-2017	CISF Colony	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	JNRC	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	12.64	7.29	25.20	35.40	19.46	50.48	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 22 to 00:00, 23-Aug-2017	CISF Colony	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	0	0	0	0	0	0	0.63	0	3.30	1.97	0.49	6.41	7.04	5.31	10.31	9.01	6.28	13.40
	JNRC	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	11.55	0	18.17	28.05	0	40.86	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 23 to 00:00, 24-Aug-2017	CISF Colony	10.61	0	18.82	22.68	0	39.80	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	0	0	0	0	0	0	0.89	0	5.04	2.57	0.26	6.43	6.83	3.78	12.48	9.41	4.89	14.31
	JNRC	30.59	1.00	46.22	1.00	1.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	18.39	9.29	32.89	43.54	26.99	72.13	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 24 to 00:00, 25-Aug-2017	CISF Colony	16.84	1.00	36.93	28.00	1.00	53.00	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	0	0	0	0	0	0	0.96	0	4.71	3.20	0.14	5.68	5.52	3.46	9.29	8.71	5.08	11.59
	JNRC	38.81	1.00	67.04	47.35	1.00	64.19	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	19.37	9.29	27.35	37.92	25.49	57.29	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 25 to 00:00, 26-Aug-2017	CISF Colony	15.66	4.23	34.33	27.28	9.76	49.58	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	0	0	0	0	0	0	0.96	0	3.55	3.32	0.03	7.14	5.38	3.49	6.94	8.71	4.46	12.55
	JNRC	27.78	1.00	45.43	37.52	1.00	70.14	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	16.79	10.25	25.93	30.86	19.60	51.35	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 26 to 00:00, 27-Aug-2017	CISF Colony	14.86	4.23	44.81	30.94	7.40	72.37	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	0	0	0	0	0	0	1.20	0	5.91	5.51	1.01	10.46	5.23	3.89	7.03	10.74	6.53	15.33
	JNRC	31.60	17.83	61.45	59.61	35.94	89.09	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	13.69	4.88	27.14	45.31	17.33	71.97	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 27 to 00:00, 28-Aug-2017	CISF Colony	10.82	3.38	19.94	26.28	6.77	48.52	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	0	0	0	0	0	0	1.14	0	5.09	4.79	2.08	8.29	5.35	4.23	6.57	10.15	7.44	13.21
	JNRC	12.08	1.00	53.00	42.38	1.00	69.89	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	14.64	9.15	23.36	40.31	16.81	78.35	-	-	-	-	-	-	-	-	-	-	-	-

Date & Time	Station	PM _{2.5}			PM ₁₀			SO ₂			NO			NO ₂			NO _x		
00:00, 28 to 00:00, 29-Aug-2017	CISF Colony	7.73	4.01	16.41	15.14	6.43	35.62	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	0	0	0	0	0	0	0.53	0	2.77	2.59	0.27	5.86	5.70	3.97	8.17	8.29	4.96	12.13
	JNRC	17.35	3.27	32.58	15.04	5.55	29.08	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 29 to 00:00, 30-Aug-2017	CISF Colony	9.03	2.92	32.10	15.69	3.90	45.71	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	0	0	0	0	0	0	1.07	0	4.34	1.95	0	4.31	1.74	0	3.36	3.67	0	5.96
	JNRC	15.84	1.00	34.22	20.92	1.00	33.35	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 30 to 00:00, 31-Aug-2017	CISF Colony	16.39	7.15	39.35	30.53	15.08	67.98	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	0	0	0	0	0	0	0.91	0	3.47	3.23	0.26	7.56	2.13	0.65	5.02	5.36	1.79	9.06
	JNRC	2.64	1.00	11.53	47.52	1.00	73.55	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 31-Aug to 00:00, 01-Sep-2017	CISF Colony	17.72	9.99	31.39	36.05	20.08	63.22	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	0	0	0	0	0	0	0.87	0	7.11	2.66	0.05	7.61	2.88	0.74	7.72	5.54	2.59	9.02
	JNRC	5.36	1.00	8.07	48.42	1.00	63.65	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	23.04	0	30.69	57.28	0	77.52	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 01 to 00:00, 02-Sep-2017	CISF Colony	17.52	4.42	41.53	29.52	10.12	50.69	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	0	0	0	0	0	0	0.73	0	9.54	1.80	0.08	21.07	4.63	1.04	35.31	6.44	2.83	56.15
	JNRC	5.03	1.00	8.07	38.61	1.00	56.91	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	22.84	9.24	35.54	60.61	29.67	122.80	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 02 to 00:00, 03-Sep-2017	CISF Colony	22.71	3.06	47.22	35.69	9.19	93.22	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	0	0	0	0	0	0	0.93	0	6.06	1.62	0.01	3.57	3.41	1.57	7.03	5.03	2.43	9.30
	JNRC	7.77	1.00	8.07	38.37	13.68	55.05	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	26.18	6.23	45.27	56.48	28.61	84.33	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 03 to 00:00, 04-Sep-2017	CISF Colony	24.16	11.95	43.11	45.01	18.35	83.18	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	0	0	0	0	0	0	0.85	0	3.70	1.90	0.13	3.92	3.19	1.28	6.87	5.08	1.77	8.03
	JNRC	8.07	8.07	8.07	63.69	36.10	91.90	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	25.20	12.86	32.99	71.94	44.80	131.30	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 04 to 00:00, 05-Sep-2017	CISF Colony	28.73	13.69	74.14	47.30	21.14	70.57	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	0	0	0	0	0	0	0.43	0	2.70	1.57	0.01	6.16	4.77	1.39	21.16	6.34	3.49	27.19
	JNRC	7.82	1.00	8.07	82.70	52.89	136.30	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	31.20	0	48.95	115.67	0	412.00	-	-	-	-	-	-	-	-	-	-	-	-

Date & Time	Station	PM _{2.5}			PM ₁₀			SO ₂			NO			NO ₂			NO _x		
00:00, 05 to 00:00, 06-Sep-2017	CISF Colony	31.88	10.44	50.99	67.26	27.90	112.40	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	0	0	0	0	0	0	1.18	0	13.57	1.28	0.01	3.10	4.01	1.72	7.94	5.28	2.38	8.76
	JNRC	4.86	1.00	8.07	97.50	1.00	164.90	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	38.65	27.73	60.37	120.38	47.62	275.00	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 06 to 00:00, 07-Sep-2017	CISF Colony	34.93	10.44	55.24	64.58	31.90	95.46	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	0	0	0	0	0	0	0.79	0	5.15	1.26	0	2.42	5.12	2.48	14.62	6.38	3.56	16.01
	JNRC	7.82	1.00	8.07	90.30	36.97	140.50	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	40.65	27.42	53.54	93.41	57.85	144.30	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 07 to 00:00, 08-Sep-2017	CISF Colony	32.60	9.16	60.78	57.82	21.84	86.09	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	0	0	0	0	0	0	0.52	0	3.07	1.53	0.09	24.56	6.12	2.72	35.09	7.66	3.23	58.48
	JNRC	8.07	8.07	8.07	72.46	1.00	126.50	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	44.13	31.02	66.59	89.94	55.20	144.70	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 08 to 00:00, 09-Sep-2017	CISF Colony	41.85	17.95	81.62	76.51	34.72	135.50	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	JNRC	8.07	8.07	8.07	58.89	1.00	150.20	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	46.59	29.72	63.11	108.62	65.61	178.20	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 09 to 00:00, 10-Sep-2017	CISF Colony	36.91	14.57	66.94	55.50	30.63	81.73	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	JNRC	42.17	1.00	91.13	88.69	1.00	142.50	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	46.97	0	62.77	100.40	0	151.40	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 10 to 00:00, 11-Sep-2017	CISF Colony	25.79	9.97	88.00	33.32	16.07	64.25	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	JNRC	49.79	1.00	175.10	16.66	1.00	100.20	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	30.69	21.02	47.83	59.59	36.01	102.00	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 11 to 00:00, 12-Sep-2017	CISF Colony	31.49	12.51	68.44	41.97	21.36	86.41	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	0	0	0	0	0	0	1.35	0.02	3.08	0.94	0.41	1.64	4.29	2.62	10.21	5.24	3.69	11.42
	JNRC	74.32	1.00	526.10	37.87	1.00	94.61	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	39.20	27.77	53.40	67.97	53.34	78.71	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 12 to 00:00, 13-Sep-2017	CISF Colony	30.86	19.14	63.28	44.75	24.30	76.21	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	160.10	0	253.80	180.89	0	780.90	1.39	0	13.54	1.51	0	9.31	4.54	0	13.09	6.02	0	20.56
	JNRC	27.13	1.73	68.39	64.42	1.00	118.40	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	37.64	23.87	50.72	74.92	51.27	121.10	-	-	-	-	-	-	-	-	-	-	-	-

Date & Time	Station	PM _{2.5}			PM ₁₀			SO ₂			NO			NO ₂			NO _x		
00:00, 13 to 00:00, 14-Sep-2017	CISF Colony	25.94	8.85	53.07	41.42	13.39	62.79	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	29.27	0	51.21	63.08	0	135.40	1.02	0	9.80	1.37	0.23	10.31	4.40	0	21.83	5.75	0	31.46
	JNRC	50.19	12.23	121.80	66.21	1.00	121.60	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	29.27	13.33	42.32	62.80	37.83	91.39	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 14 to 00:00, 15-Sep-2017	CISF Colony	30.15	10.76	51.59	43.45	15.39	100.20	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	26.37	13.65	56.19	71.55	15.33	106.20	1.09	0	13.11	1.82	0.14	3.48	2.28	0.61	7.12	4.10	1.19	9.12
	JNRC	36.03	6.20	114.60	35.21	1.00	72.67	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	31.27	12.98	49.83	56.69	31.80	117.80	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 15 to 00:00, 16-Sep-2017	CISF Colony	35.09	18.47	61.18	58.10	35.13	82.96	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	40.34	18.87	66.82	82.44	43.74	146.90	0.91	0	8.65	1.83	0	3.56	1.11	0	1.89	2.95	0	4.96
	JNRC	35.21	11.95	92.30	59.74	1.00	90.80	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	43.64	34.38	54.40	74.09	49.34	96.91	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 16 to 00:00, 17-Sep-2017	CISF Colony	40.00	19.27	74.18	55.46	23.21	91.02	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	JNRC	26.08	1.00	62.31	63.42	1.00	103.50	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	42.55	31.25	61.44	80.58	42.63	162.10	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 17 to 00:00, 18-Sep-2017	CISF Colony	33.39	19.05	58.84	50.85	23.76	96.66	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	JNRC	67.33	1.00	811.30	38.54	1.00	123.40	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	44.68	24.17	59.43	94.90	49.66	162.10	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 18 to 00:00, 19-Sep-2017	CISF Colony	20.80	7.21	48.82	27.09	5.11	63.49	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	17.53	6.44	40.78	34.75	5.97	83.02	0.35	0	7.07	1.44	0.46	2.83	0.26	0	0.92	1.64	0.13	3.18
	JNRC	17.27	1.00	210.00	13.05	1.00	85.31	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	18.95	7.79	32.34	33.09	16.18	64.61	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 19 to 00:00, 20-Sep-2017	CISF Colony	10.23	2.34	21.38	17.81	5.29	42.92	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	11.53	4.21	30.38	19.00	7.01	37.25	0.56	0	4.65	1.81	0.25	3.30	0.25	0	1.18	2.02	0.43	3.62
	JNRC	25.53	0.88	210.00	6.98	1.00	23.89	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	10.79	5.42	17.63	16.96	8.98	32.30	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 20 to 00:00, 21-Sep-2017	CISF Colony	14.97	5.60	34.38	26.86	5.33	67.53	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	11.69	4.24	27.62	46.03	10.11	114.80	0.35	0	3.36	1.68	0.19	6.65	0.28	0	1.08	1.85	0.09	5.50
	JNRC	19.19	1.00	114.20	22.22	1.00	73.08	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	19.89	9.09	46.36	53.83	15.19	172.80	-	-	-	-	-	-	-	-	-	-	-	-

Date & Time	Station	PM _{2.5}			PM ₁₀			SO ₂			NO			NO ₂			NO _x		
00:00, 21 to 00:00, 22-Sep-2017	CISF Colony	22.21	11.10	43.38	33.96	11.73	74.09	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	21.00	8.63	42.30	60.89	36.58	91.33	0.34	0	4.25	1.55	0.46	2.95	0.19	0	1.06	1.66	0.58	3.16
	JNRC	62.92	0.02	443.60	49.31	1.00	65.11	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	27.95	13.43	40.90	65.91	36.41	90.84	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 22 to 00:00, 23-Sep-2017	CISF Colony	23.51	10.32	52.16	40.77	16.34	71.20	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	22.67	8.17	38.53	67.92	32.24	120.40	0.66	0	3.97	1.85	0.16	3.93	0.28	0	1.17	2.10	0.23	4.52
	JNRC	33.77	0.69	439.70	45.88	1.00	64.67	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	27.69	17.11	40.90	64.84	38.36	103.60	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 23 to 00:00, 24-Sep-2017	CISF Colony	33.01	9.72	55.00	50.90	26.84	82.62	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	32.55	14.36	64.19	75.50	39.17	136.50	0.43	0	8.85	1.57	0.04	3.24	0.23	0	1.13	1.73	0.04	3.62
	JNRC	37.34	0.05	554.90	52.14	1.00	70.93	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	27.46	20.50	49.80	80.42	63.59	102.90	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 24 to 00:00, 25-Sep-2017	CISF Colony	42.60	20.47	62.23	60.86	34.79	110.80	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	34.68	15.92	55.08	90.96	62.33	129.60	0.93	0	8.99	1.64	0	3.41	0.25	0	1.00	1.82	0.36	3.98
	JNRC	24.16	0.58	308.40	45.22	1.00	81.73	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	49.48	34.22	68.69	107.20	49.36	303.90	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 25 to 00:00, 26-Sep-2017	CISF Colony	44.82	23.21	73.03	74.28	47.87	130.40	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	38.96	17.01	61.35	118.00	70.30	157.20	0.57	0	15.34	1.48	0.20	3.43	0.18	0	0.78	1.57	0	3.19
	JNRC	11.42	4.32	22.73	69.44	1.00	122.00	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	49.95	46.98	61.70	103.79	95.41	170.50	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 26 to 00:00, 27-Sep-2017	CISF Colony	43.76	22.60	73.00	73.81	33.11	99.92	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	42.32	17.92	69.98	126.87	73.64	222.40	1.12	0	8.99	1.49	0.01	4.97	0.25	0	1.04	1.68	0.20	5.40
	JNRC	15.36	1.00	28.92	103.04	1.00	152.80	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	45.14	30.10	56.18	136.03	70.18	305.80	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 27 to 00:00, 28-Sep-2017	CISF Colony	25.37	11.86	63.53	47.57	19.81	104.00	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	21.78	9.46	45.50	63.63	27.35	137.70	0.98	0	10.44	1.47	0	3.58	0.20	0	0.95	1.57	0.01	3.35
	JNRC	8.54	2.94	17.09	88.88	30.03	139.30	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	24.06	12.05	39.88	73.11	34.62	186.50	-	-	-	-	-	-	-	-	-	-	-	-
00:00, 28 to 00:00, 29-Sep-2017	CISF Colony	26.56	11.18	46.76	49.90	16.34	106.60	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	JNRC	9.19	1.00	23.21	32.93	1.00	87.35	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	49.21	7.50	447.50	56.44	1.25	104.30	-	-	-	-	-	-	-	-	-	-	-	-

Date & Time	Station	PM _{2.5}			PM ₁₀			SO ₂			NO			NO ₂			NO _x		
00:00, 29 to 00:00, 30- Sep-2017	CISF Colony	20.15	1.00	50.03	25.99	1.00	55.17	-	-	-	-	-	-	-	-	-	-	-	-
	Campus Store	19.47	6.60	42.38	56.28	23.60	128.40	1.43	0	12.16	1.50	0.06	2.74	0.14	0	0.87	1.51	0.11	3.40
	JNRC	4.68	1.00	12.64	27.23	1.00	65.99	-	-	-	-	-	-	-	-	-	-	-	-
	Near Karo Bridge	28.13	13.72	42.26	61.89	27.10	99.27	-	-	-	-	-	-	-	-	-	-	-	-

Report generated by Phoenix Robotix Pvt. Ltd. at 18:29 - 29/Nov/2017 IST

Mitra S. K. Private Limited

APF O. BARBIL Ward No-6

Dist. Keonjhar, Odisha - 758035

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Client Name: Steel Authority of India Limited, Site : Bolani Ores Mines Dist. Keonjhar Odisha
Ref. No: BBL/ENV/2017-16/117

Sl	LOCATION	TYPE	Date	Month	Year	pH	Cu	F	FRC	Fe	Mn	COH5OH	Cd	CN	Pb	Hg	NI	As	Zn	Cr+6	TSS	BOD	COD	O&G	S	NN
1	Tailing pond natural nallah	WATER	24-06-2017	JUNE	2017	6.52	<0.02	0.32	<0.1	0.09	<0.02	<0.001	<0.001	<0.01	<0.005	<0.001	<0.02	<0.01	<0.02	<0.01	24	2.2	8	<1.4	<0.1	<0.1
2	Catch pit water	WATER	24-06-2017	JUNE	2017	7.15	<0.02	0.1	<0.1	1.8	<0.02	<0.001	<0.001	<0.01	<0.005	<0.001	<0.02	<0.01	<0.02	<0.01	34	2.8	12	<1.4	<0.1	0.73
3	Karo river at kalimandir	WATER	22-06-2017	JUNE	2017	7.27	<0.02	0.14	<0.1	0.95	<0.02	<0.001	<0.001	<0.01	<0.005	<0.001	<0.02	<0.01	<0.02	<0.01	21	<2.0	8	<1.4	<0.1	0.28
4	Jhikria nalla before karo	WATER	21-06-2017	JUNE	2017	6.67	<0.02	<0.1	<0.1	1.7	<0.02	<0.001	<0.001	<0.01	<0.005	<0.001	<0.02	<0.01	<0.02	<0.01	8	<2.0	<4.0	<1.4	<0.1	<0.1
5	Jhikria nalla After karo	WATER	22-06-2017	JUNE	2017	6.77	<0.02	<0.1	<0.1	0.78	<0.02	<0.001	<0.001	<0.01	<0.005	<0.001	<0.02	<0.01	<0.02	<0.01	14	<2.0	<4.0	<1.4	<0.1	0.15
6	Well at bolani basti	WATER	22-06-2017	JUNE	2017	6.72	<0.02	<0.1	<0.1	0.29	<0.02	<0.001	<0.001	<0.01	<0.005	<0.001	<0.02	<0.01	<0.02	<0.01	9	<2.0	<4.0	<1.4	<0.1	0.92
7	Well at balagoda	WATER	22-06-2017	JUNE	2017	6.46	<0.02	<0.1	<0.1	0.17	<0.02	<0.001	<0.001	<0.01	<0.005	<0.001	<0.02	<0.01	<0.02	<0.01	<2.5	<2.0	8	<1.4	<0.1	0.48
8	Panposh nalla	WATER	20-06-2017	JUNE	2017	6.89	<0.02	<0.1	<0.1	2	<0.02	<0.001	<0.001	<0.01	<0.005	<0.001	<0.02	<0.01	<0.02	<0.01	6	<2.0	31	<1.4	<0.1	0.43
9	MCGH tap water	WATER	20-06-2017	JUNE	2017	6.78	<0.02	<0.1	<0.1	<0.05	<0.02	<0.001	<0.001	<0.01	<0.005	<0.001	<0.02	<0.01	<0.02	<0.01	<2.5	4.7	8	<1.4	<0.1	<0.1
10	Karo near lease boundary	WATER	21-06-2017	JUNE	2017	7.3	<0.02	0.39	<0.1	0.39	<0.02	<0.001	<0.001	<0.01	<0.005	<0.001	<0.02	<0.01	<0.02	<0.01	9	<2.0	<4.0	<1.4	<0.1	0.47
11	KGH	WATER	21-06-2017	JUNE	2017	6.13	<0.02	<0.1	<0.1	0.11	<0.02	<0.001	<0.001	<0.01	<0.005	<0.001	<0.02	<0.01	<0.02	<0.01	<2.5	<2.0	<4.0	<1.4	<0.1	<0.1
12	Tailing pond seepage water	WATER	20-06-2017	JUNE	2017	6.87	<0.02	<0.1	<0.1	0.62	<0.02	<0.001	<0.001	<0.01	<0.005	<0.001	<0.02	<0.01	<0.02	<0.01	30	<2.0	<4.0	<1.4	<0.1	1.3

DATE: 01/09/2017

Checked by:-

(Signature)

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For Mitra S. K. Private Limited

Authorised Signatory

(Signature)

