ELECTROSTEEL CASTINGS LIMITED

Vill : Kashberia, P. O. : Shibramnagar, Haldia, Dist. : Purba Medinipur 721 635, India
Tel : 03224 277 721, Fax : 03224 278107
CIN : L27310OR1955PLC000310
Web : www.electrosteelcastings.com

PIONEERING 25 YEARS OF DI PIPES

ECL/MOEFCC/FA/Haldia/02/19-20

Date: 27/11/2019

To
Mr. P.Suresh Babu
Deputy Director(S),
Ministry of Environment, Forest & Climate Change,
Eastern Regional Office,
A/3, Chandrasekharpur
Bhubaneswar – 751023.

Ref: EC Letter No.-J-11011/02/2016-IA-II(I), dated 12.04.2017.

Sub: Half Yearly Compliance Report of the conditions of Environmental Clearance issued by Ministry of Environment & Forest, New Delhi for Proposed installation of the Ferro Alloy Plant through setting up of 1X6MVA & 1x9MVA submerged Are Furnace for production of Ferro Manganese (38,156TPA) or Silico Manganese (27,109 TPA) or Ferro Silicon (10,421 TPA) by M/s- Electrosteel Castings Ltd., Located at Haldia, Dist –Purba Medinipur, West Bengal for the **Period April-19 to September-19.**

Respected Sir,

This has reference to the Environmental Clearance letter no-J-11011/02/2016-IA-II(I), dated 12.04.2017 issued by Ministry of Environment, Forest & Climate Change, New Delhi.

We enclose herewith Compliance Report for the Period of **April-19 to September-19** for your perusal.
During this period, 9MVA Submerged Are Furnace was commissioned and commercial production started on 01.07.2019.
This is for your information & record please.

Thanking you,
Yours faithfully,

For **ELECTROSTEEL CASTINGS LIMITED,**

(A. K. Dey)
Sr. Vice President

Enclo: a) EC Compliance Report-(Annexure-1).
b) Report of Stack Monitoring (Annexure-2).
c) Report of AAQM. (Annexure-3).
d) Report of Ambient Noise report. (Annexure-4).
e) Health check-up report (Annexure-5)

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PIONEERING 25 YEARS OF DI PIPES

CC: - 1) Regional Director,
Central pollution control board,
Southend conclave, Block 502,
5th & 6th floor 1582 Rajdanga main road,
Saratpark, Bose pukur, Kasba.
Kolkata-700107.

2) The Asst. Environmental Engineer & in- charge.
West Bengal Pollution Control Board,
Haldia Regional Office,
Super Market Building,
Durgachak,
Medinipur (East)-721602.

Annexure-I

ENVIRONMENT CLEARANCE SIX MONTHLY COMPLIANCE REPORT

(FROM APRIL-2019 TO SEPTEMBER -2019)

Project Name :- Proposed installation of the Ferro Alloy Plant through setting up of 1 x 6 MVA & 1 x 9 MVA submerged Arc Furnace for production of Ferro Manganese (38,156 TPA) or Silico Manganese (27,109 TPA) or Ferro Silicon (10,421 TPA) by M/s. Electrosteel Castings Ltd., located at Haldia, Dist. Purba Medinipur, West Bengal

Environment Clearance : J-11011/02/2016-IA-II (I), dated 12.04.2017

SL No.	CONDITION OF ENVIRONMENTAL CLEARANCE	STATUS OF COMPLIANCE
PART A- Specific Conditions		
i.	The project proponent should install 24x7 air monitoring devices to monitor air emission, as provided by CPCB and submit report to Ministry and its Regional Office	OCEMS has been installed in two stacks one is connected with Furnace stack & another one is connected with raw material handling stack. OCEMS connectivity of Furnace bag filter stack with CPCB server through M/s- Forb Marshal is under progress.
ii.	Bag filters to be installed to reduce the emission of Particulate Matter (PM). PM emission should not exceed 100 mg/m3. Gaseous emission levels including secondary fugitive emissions from all the sources shall be controlled within the permissible limits which have been most recently prescribed by the Ministry and regularly monitored. Guidelines/Code of Practice issued by the CPCB should also be followed.	Two bag filters have been installed. One is attached with the 9MVA Submerged Electric Arc Furnace (SEAF) & another with raw material handling system. Stack monitoring report of CPCB approved 3rd party is attached (Annexure-2) & the results are within the limit.
iii.	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.	Is being followed and records maintained.
iv.	Neurological Evaluation of workers exposed to Manganese should be monitored annually and the report should be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office.	Is being followed and records maintained. (Annexure-5)
v.	Measures shall be taken to reduce PM levels in the ambient air. Stack of adequate height & diameter with continuous stack monitoring facilities for all the stacks should be provided. In addition, sufficient air pollution control devices viz. bag house, bag filters etc. should be provided.	Following measures have been taken to reduce PM level in the ambient air. i) Two Stationary sprinklers & one mobile water sprinkler have been deployed for dust suppression. ii) Installed two stacks of adequate height & diameter with continuous stack monitoring facility in both stack. All stacks are connected with suitable PC device (Bag filter).

ELECTROSTEEL CASTINGS LIMITED Ferro Alloy Plant

vi.	Dust extraction system comprising of pulse jet type bag filter, centrifugal fan and motor ,duct work including suction hoods ,dust supports ,stack, duct hopper ,rotary air lock valves etc. should be installed to control the primary and secondary emission	Adequate dust extraction system comprising of required equipment has been installed to control the primary and secondary emission.
vii.	Water sprinkling arrangements as well as dry fog system to control fugitive emission shall put up. Water sprinkling should be carried out at the raw material stockyard to control fugitive dust emissions.	Stationary water sprinklers, mobile water sprinkler & Dry Fog System have been installed to control fugitive emissions.
viii.	Efforts should be made to use maximum water from the rain water harvesting sources .If needed ,capacity of the reservoir shall be enhanced to meet the maximum water requirement .Only balance water requirement shall be met from others .Use of air cooled condensers shall be explored and closed circuit cooling system shall be provided to reduce water consumption. Water requirement should be modified accordingly	One rain water harvesting tank has been constructed to use rain water. Close circuit cooling system has been provided to reduce water consumption.
ix.	10-15 m wide green belt should be developed all along the boundary of the plant and in all 33% of the area should be developed green by planting native and broad leaved species in consultation with local DFO and local communities as per the CPCB guidelines. The entire plantation work should be completed in 3 years.	Work for development of green belt has already been started with consultation with Forest Range Office at Balughata under Nandakumar forest range office and local communities. In this rainy season many saplings (Mango, Akashia, Bakul & Jahu etc) have been planted along the boundary wall and work is continuing.
x.	All the Ferro alloy slag shall be used in the preparation of building materials.	All Ferro Alloy Slags are being used for road making & construction purpose only.
xi.	The Company shall submit within three months their policy towards Corporate Environment Responsibility which shall inter-alia address i) Standard operating process/procedure to being into focus any infringement/deviation/violation of environmental or forest norms/conditions, ii) Hierarchical system or Administrative order of the Company to deal with environmental issues and ensuring compliance to the environmental clearance conditions and iii) System of reporting of non-compliance/violation environmental norms to the Board of Directors of the company and/or stakeholders or shareholders.	Environmental policy has been already Submitted to MoEFCC on 10.01.2018. Standard operating procedure will be followed as stated in EMP. Already Submitted on 10.01.2018. All the environmental issues are communicated to the top management in monthly MIS meeting and also to the Board of Directors quarterly through a systematic structured format by Head – Environment.

ELECTROSTEEL CASTINGS LIMITED
Ferro Alloy Plant

xii.	An amount equal to Rs. 125 Lakhs, which is 2.5% of the total project cost (Rs. 50 Crores) shall be earmarked towards the Enterprise Social Commitment based on issues raised during the Public Hearing and needs of local people. Item-wise detailed plan with time bound action plan would be prepared as indicated by the project proponent and this plan shall be implemented. Action taken report in this regard shall be submitted to the Ministry's Regional Office.	(1) An amount of Rs. 51000 /- handed over to 10 BPL students from April 19 to September-19. This will be continued on quarterly basis. (Total disburses Rs 0.765 Lacs) (2) Work for construction of Dispensary at Kismatshivramnagar has been started on April'2019 & till now we have expense Rs. 2.34 lakhs. (3) Dismantling & building construction work at Basudevpur Paschim Pally Primary School started on April 2019 and completed in the month of May 2019. Expenses incurred towards Construction of sanitary Block & Mid- day kitchen room is amounting Rs. 4.22 lakhs. (4)Construction of Community Hall is under progress at Kashberia village and till date we have expense Rs. 4.68 lakhs. (5) Two drinking water facility (Tube well/submerged) have been set up for providing drinking water facility at Kashberia & Gobindapur villages and expenses incurred is Rs. 2.65 lakhs. (6) One Pond has been renovated in village- Kashberia & expenses incurred is Rs. 4.0 Lakhs.
xiii.	The project proponent shall provide for solar light system for all common areas, street lights, villages, parking around project area and maintain the same regularly.	Six Solar street lights have been installed within project site with all necessary arrangements.
xiv.	The project proponent shall fully provide for LED lights in their offices and residential areas.	LED light has been installed throughout the plant.
xv.	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.	All facilities & infrastructures has been provided as per the requirement.
PART B – General Conditions		
i.	The project authorities must strictly adhere to the stipulations made by the West Bengal Pollution Control Board and the State Government.	Following all stipulated guideline of WBPCB & the state Government.

ELECTROSTEEL CASTINGS LIMITED Ferro Alloy Plant

ii.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment Forest and Climate Change (MoEF&CC).	We will not do any further expansion or modification in the plant without prior approval of MoEF&CC.
iii.	At least four ambient air quality monitoring stations should be established in the downward direction as well as where maximum ground level concentration of PM_{10}, PM2.5, SO_2, NO_x are anticipated in consultation with the SPCB. Data on ambient air quality and stack emission shall be regularly submitted to this Ministry including its Regional Office at Bhubaneswar and the SPCB/CPCB once in six month.	Four AAQ monitoring stations have already been installed at different locations based on wind direction in consultation with SPCB. AAQ monitoring has been started from March 2109 on wards & the results are within the limit value. Month wise summary report except rainy season is being attached for the said period in Annexure-3.
iv.	Industrial waste water shall be properly collected treated so as to conform to the standards prescribed under GSR 422 (E) dated 19 th May ,1993 and 31 st December ,1993 or as amended from time to time . The treated waste water shall be utilized for plantation purpose.	Industrial waste water is being collected inland pond through surface drain & utilized it for plantation & dust suppression purpose.
v.	The overall noise levels in and around the plant area shall be kept well within the standards (85 dbA) by providing noise control measures including acoustic hoods ,silencers , enclosures etc. on all sources of noise generation .The ambient noise levels should conform to the standards prescribed under EPA Rules ,1989 viz.75 db A (day time) and 70 dbA (night time).	We have started ambient noise monitoring internally in four locations along the boundary wall in day & night time on monthly basis. We have also started ambient noise monitoring by approved 3rd party on quarterly basis. Results are attached in Annexure-4.
vi.	Occupational health surveillance of the worker shall be done on a regular basis and records maintained as per the Factories Act	Occupational Health Surveillance programme is being done as per Factory Rules & records is being maintained as per Factories Act.
vii.	The company shall develop rain water harvesting structure to harvest the rain water for utilization in the lean season besides recharging the ground water table.	We have constructed a pond inside the plant. All rain water are collected in the pond through surface drain and it was utilize for dust suppression, water sprinkling & gardening purpose.
viii.	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA /EMP report .Further the company must undertake socio –economic development activities in the surrounding village like community development programme ,educational programme ,drinking water supply and health care etc.	Complying as per EIA/EMP report.
ix.	Requisite funds shall be earmarked towards capital cost and recurring cost /annum for environment pollution control measures to implement the conditions stipulated by the Ministry Of Environment, Forest and Climate Change (MoEFCC) as well as the State Government .An implementation schedule for implementing all the	Complied as per documents already submitted on 10.01.2018.

ELECTROSTEEL CASTINGS LIMITED Ferro Alloy Plant

	conditions stipulated herein shall be submitted to the Regional Office of the Ministry at Bhubaneswar. The funds so provide shall not be diverted for any other purpose.	
x.	A copy of clearance letter shall be sent by the proponent to concerned Panchayats, Zila Prishad / Municipal Corporation, Urban Local Body and the local NGO, if any, from whom suggestions / representations, if any were received while processing the proposal. The clearance letter shall also be put on the web site of the Company by the proponent.	Copy of clearance letter had already been Submitted to concern authority and it is also put on the web site of the company.
xi.	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Officer of the MoEF&CC at Bhubaneswar. The respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely ; PM_{10} ,SO_2,NOx (ambient levels as well as stack emissions) or critical sectoral parameters ,indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain	Is being done.
xii.	The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Officer of MoEF&CC, the respective Zonal Office of CPCB and the SPCB .The Regional Office of this Ministry at Bhubaneswar /CPCB/SPCB shall monitor the stipulated conditions.	Is being followed.
xiii.	The environmental statement for each financial year ending 31 st 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 Environmental (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental conditions and shall also be sent to the respective Regional Office of the MoEF&CC at Bhubaneswar by e-mail.	Environmental statement report for the financial year 2019- 2020 Will be submitted in Form-V before 30/09/20.
xiv.	The Project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB and may also be seen at Website of the Ministry of Environment, Forests and climate Change (MoEF&CC) AT http:/envfor.nic.in. This shall be advertised within seven days from the date of issue of the clearance in the region of which one shall be in the vernacular language	Already complied. Copy of which Submitted to your office on 10.01.2018.

ELECTROSTEEL CASTINGS LIMITED Ferro Alloy Plant

	of the locality concerned and a copy of the same should be forwarded to the Regional Office at Bhubaneswar.	
xv.	Project authorities shall inform the Regional Office as well as the Ministry: i)The date of financial closure ii)Final approval of the project by the concerned authorities iii) The date of commencing the land development work.	Project to be done out of internal accrual. 1) Received NOC from WBPCB valid up to 31.08.2024. 2) Received Consent to Operate from WBPCB on 30.05.19 & valid up to 31.03.2024. Started on 02.04.2018.

ELECTROSTEEL CASTINGS LIMITED
Ferro Alloy Plant

Annexure - 2

ENVIROCHECK
Recognised by MoEF&CC, WBPCB, JSPCB & OSPCB
Accredited by NABL (ISO/IEC 17025:2005)
Certified by ISO 9001: 2015, ISO 14001 : 2015 & OHSAS 18001:2007

OHSAS 18001 : 2007

STACK GAS ANALYSIS REPORT

1.	Name of the Industry	:	Electro Steel Castings Ltd. (Ferro-Alloy Plant)
2.	Address	:	Kashberia, P.O. - Shibram Nagar, Haldia, Purba Medinipur - 721635
3.	Date of sampling	:	18.07.2019 (12:45 p.m. – 01:55 p.m.)
4.	Report No.	:	46/EC/July/TR(A)/I/19-20
5.	Analysis completed on	:	29.07.2019
6.	Reporting Date	:	02.08.2019

A. GENERAL INFORMATION ABOUT STACK

1.	Stack attached to	:	SEAF – 1
2.	Shape of Stack	:	Circular
3.	Material of Construction	:	M.S
4.	Height of Stack from G. L. (mtr.)	:	35.0
5.	Stack I.D. at sampling point (mtr.)	:	1.80
6.	Height of sampling port from G. L. (mtr.)	:	30.0
7.	Capacity	:	Rated – 9 MVA (Running – 4.9 MVA)
8.	Emission due to	:	Melting of Coke/Coal, Manganese-Ore, Quartzite & Dolomite

	(a) Type of Fuel Used	:	Electrically Operated	(b) Fuel Consumption	:	Nil
9.(a)	Permanent ladder & platform		Yes	(b) Pollution Control Device	:	Bag Filter

B. RESULTS OF SAMPLING

SL. NO.	PARAMETERS	METHOD NO.		RESULTS
1.	Flue Gas Temperature (°C)	IS : 11255 (Part 1)	:	88.0
2.	Barometric Pressure (mm of Hg.)	--	:	756.0
3.	Velocity of Gas flow (m/s)	IS : 11255 (Part 3)	:	16.55
4.	Quantity of Gas flow (Nm^3/hr.)	IS : 11255 (Part III)	:	123294.85
5.	Concentration of SO_2 (mg/Nm^3)	IS 11255 (Part 2) 1985 RA 2003	:	118.78
6.	Concentration of NO_x (mg/Nm^3)	IS : 11255 (Part 7) 2005 & ASTM D 1608-98 reapproved 2003 : Sec 11 (Vol. 11.07) 2011	:	89.96
7.	Concentration of CO_2 % (v/v)	IS 13270 1992 RA 2003	:	1.2
8.	*Concentration of O_2 % (v/v)	IS 13270 1992 RA 2003	:	16.4
9.	*Moisture (%)	Emission Control Part – III, CPCB	:	1.02
10.	Concentration of CO %(v/v)	IS 13270 1992 RA 2003	:	<1.0
11.	Concentration of Particulate Matter (mg/Nm^3)	IS 11255 (Part – 1) 1985 RA 2003 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec 11(Vol3 11.07) : 2011	:	8.27

Remarks : *All the information under column A are supplied by the respective industry.*
: *Sample - I*

Note : In the above test report the (*) marked parameters are not in NABL scope.

Date : 02.08.2019

Authorised Signatory :

H.O. : 63/B, Rastraguru Avenue, Kolkata - 700028 • Ph. 033 25792891 / 25497490 • Fax : 033 25299141
Laboratory : 189, 190 & 192 Rastraguru Avenue, Kolkata - 700028 • Ph. 033 25792889
E-mail : info@envirocheck.org / envirocheck50@gmail.com • Website : www.envirocheck.org
Branch Office : Siliguri • Haldia • Durgapur • Dhanbad • Gangtok • Port Blair • Dehradun • New Delhi
Overseas : UAE • Qatar • Netherlands

ELECTROSTEEL CASTINGS LIMITED Ferro Alloy Plant

STACK GAS ANALYSIS REPORT

1.	Name of the Industry	: Electro Steel Castings Ltd. (Ferro-Alloy Plant)
2.	Address	: Kashberia, P.O. - Shibram Nagar, Haldia, Purba Medinipur - 721635
3.	Date of sampling	: 18.07.2019
4.	Report No.	: 46/EC/July/IWIA)/III/19-20
5.	Analysis completed on	: 29.07.2019
6.	Reporting Date	: 02.08.2019

A. GENERAL INFORMATION ABOUT STACK

1.	Stack attached to	: Raw Material Handling System
2.	Shape of Stack	: Circular
3.	Material of Construction	: M.S.
4.	Height of Stack from G. L. (mtr.)	: 30.0
5.	Stack I.D. at sampling point (mtr.)	: 0.6096
6.	Height of sampling port from G. L. (mtr.)	: 12.18
7.	Emission due to	: Process Activity (Handling of Raw Materials)

	(a) Type of Fuel Used	: N.A.	(b) Fuel Consumption	:	Nil
8.(a)	Permanent ladder & platform	Yes	(b) Pollution Control Device	:	Bag Filter

B. RESULTS OF SAMPLING

SL. NO.	PARAMETERS	METHOD NO.		RESULTS
1.	Flue Gas Temperature (°C)	IS : 11255 (Part 1)	:	53.0
2.	Barometric Pressure (mm of Hg.)	--	:	756.0
3.	Velocity of Gas flow (m/s)	IS : 11255 (Part 3)	:	12.57
4.	Quantity of Gas flow ($Nm^3/hr.$)	IS : 11255 (Part III)	:	12010.86
5.	Concentration of Particulate Matter (mg/Nm^3)	IS 11255 (Part - 1) 1985 RA 2003 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec 11(Vol.3 11.07) : 2011	:	16.20

Remarks : *All the information under column A are supplied by the respective industry.*

Note : In the above test report the (*) marked parameter is not in NABL scope.

Authorised Signatory :

Date : 02.08.2019

ELECTROSTEEL CASTINGS LIMITED Ferro Alloy Plant

ENVIROCHECK
Recognised by MoEF&CC, WBPCB, JSPCB & OSPCB
Accredited by NABL (ISO/IEC 17025:2005)
Certified by ISO 9001:2015, ISO 14001 : 2015 & OHSAS 18001:2007

STACK GAS ANALYSIS REPORT

1.	Name of the Industry	:	Electro Steel Castings Ltd. (Ferro-Alloy Plant)
2.	Address	:	Kashberia, P.O. – Shibram Nagar, Haldia, Purba Medinipur - 721635
3.	Date of sampling	:	18.07.2019
4.	Report No.	:	46/EC/July/TR(A)/IV/19-20
5.	Analysis completed on	:	29.07.2019
6.	Reporting Date	:	02.08.2019

A. GENERAL INFORMATION ABOUT STACK

1.	Stack attached to	:	D. G. – 250 KVA (Acoustic Enclosure)
2.	Shape of Stack	:	Circular
3.	Material of Construction	:	M.S.
4.	Height of Stack from G. L. (mtr.)	:	10.36
5.	Stack I.D. at sampling point (mtr.)	:	0.1524
6.	Height of sampling port from G. L. (mtr.)	:	7.92
7.	Emission due to	:	Combustion of H.S.D

	(a) Type of Fuel Used	:	H.S.D	(b) Fuel Consumption	:	57 litr./hr.
8.(a)	Permanent ladder & platform		Yes	(b) Pollution Control Device	:	Nil

B. RESULTS OF SAMPLING

SL. NO.	PARAMETERS	METHOD NO.		RESULTS
1.	Flue Gas Temperature (°C)	IS : 11255 (Part 1)	:	87.0
2.	Barometric Pressure (mm of Hg.)	--	:	756.0
3.	Velocity of Gas flow (m/s)	IS : 11255 (Part 3)	:	7.86
4.	Quantity of Gas flow (Nm^3/hr.)	IS : 11255 (Part III)	:	423.88
5.	Concentration of SO_2 (mg/Nm^3)	IS 11255 (Part 2) 1985 RA 2003	:	61.93
6.	Concentration of NO_x (mg/Nm^3)	IS : 11255 (Part 7) 2005 & ASTM D 1608-98 reapproved 2009 : Sec 11 (Vol. 11.07) : 2011	:	72.37
7.	Concentration of CO_2 % (v/v)	IS 13270 1992 RA 2003	:	6.8
8.	*Concentration of O_2 % (v/v)	IS 13270 1992 RA 2003	:	12.0
9.	Concentration of CO %(v/v)	IS 13270 1992 RA 2003	:	<1.0
10.	Concentration of Particulate Matter (mg/Nm^3)	IS 11255 (Part – 1) 1985 RA 2003 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec 11(Vol3 11.07) : 2011	:	22.10

Remarks : *All the information under column A are supplied by the respective industry.*

Note : In the above test report the (*) marked parameters are not in NABL scope

Date : 02.08.2019

Authorised Signatory :

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Overseas : UAE • Qatar • Netherlands

ELECTROSTEEL CASTINGS LIMITED Ferro Alloy Plant

Annexure -3

AMBIENT AIR QUALITY

SUMMARY REPORT

Electrosteel Castings Ltd.
Ferro Alloy Plant
Haldia, Kasberia, P.O. – Shivramnagar,
Pin - 721635

APRIL-2019

SUMMARY REPORT FOR THE MONTH OF APRIL, 2019

1.	Name of the Industry	:	M/S. Electrosteel Castings Limited (Ferro Alloy Plant)
2.	Address	:	Haldia , Kasberia, P.O. – Shivramnagar, Pin - 721635

LOCATION: Dakshin Kashberia- South side of the Factory (Outside Factory Premises)

Parameters	Sampling Date									Limit as per NAAQ Standards (24 hours) (Schedule VII)
	01.04.2019	04.04.2019	08.04.2019	12.04.2019	18.04.2019	20.04.2019	23.04.2019	26.04.2019	29.04.2019	
PM_{10} ($\mu g/m^3$)	80.5	85.1	83.2	82.5	85.6	84.2	83.5	82.8	80.1	100
$PM_{2.5}$ ($\mu g/m^3$)	42.8	45.6	44.1	43.8	45.8	44.3	43.1	42.8	42.5	60
SO_2 ($\mu g/m^3$)	8.50	9.20	7.80	7.80	8.50	8.50	7.80	7.50	7.20	80
NOx ($\mu g/m^3$)	35.0	36.5	32.50	30.0	35.0	36.5	31.80	30.0	28.5	80

Average PM_{10} = 83.05 ($\mu g/m^3$), $PM_{2.5}$ = 43.86 ($\mu g/m^3$), SO_2 = 8.08 ($\mu g/m^3$), NOx = 32.86 ($\mu g/m^3$),

Continued.... Page 2

LOCATION: Main Gate of Ferro Alloy Plant (Inside Factory Premises)

Parameters	Sampling Date									Limit as per NAAQ Standards (24 hours) (Schedule VII)
	01.04.2019	04.04.2019	08.04.2019	12.04.2019	18.04.2019	20.04.2019	23.04.2019	26.04.2019	29.04.2019	
PM_{10} ($\mu g/m^3$)	85.1	82.8	84.5	83.5	81.2	85.6	84.5	83.2	80.1	100
$PM_{2.5}$ ($\mu g/m^3$)	45.8	42.6	44.1	43.8	42.5	45.2	44.8	43.5	42.5	60
SO_2 ($\mu g/m^3$)	8.20	9.50	8.00	9.20	7.80	8.50	6.80	8.90	9.80	80
NOx ($\mu g/m^3$)	31.80	38.50	32.50	38.50	30.00	35.00	28.50	40.00	41.80	80

Average PM_{10} = 83.38 ($\mu g/m^3$), $PM_{2.5}$ = 43.86 ($\mu g/m^3$), SO_2 = 8.52 ($\mu g/m^3$), NOx = 35.17 ($\mu g/m^3$),

Continued.... Page 3

LOCATION: Kashberia Uttarpally (North Side) (Outside Factory Premises)

Parameters	Sampling Date									Limit as per NAAQ Standards (24 hours) (Schedule VII)
	01.04.2019	04.04.2019	08.04.2019	12.04.2019	18.04.2019	20.04.2019	23.04.2019	26.04.2019	29.04.2019	
PM_{10} ($\mu g/m^3$)	81.2	80.1	79.5	82.3	83.1	82.5	81.2	83.2	83.5	100
$PM_{2.5}$ ($\mu g/m^3$)	42.5	41.2	41.1	43.5	42.8	44.1	40.1	43.2	41.5	60
SO_2 ($\mu g/m^3$)	7.20	6.50	6.80	6.50	7.50	8.50	8.00	8.50	7.20	80
NOx ($\mu g/m^3$)	30.00	26.50	25.00	23.80	25.00	30.00	29.50	31.50	30.00	80

Average PM_{10} = 81.84 ($\mu g/m^3$), $PM_{2.5}$ = 42.22 ($\mu g/m^3$), SO_2 = 7.41 ($\mu g/m^3$), NOx = 27.92 ($\mu g/m^3$),

LOCATION: Kishmat Shibramnagar West side (Outside Factory Premises)

Parameters	Sampling Date									Limit as per NAAQ Standards (24 hours) (Schedule VII)
	01.04.2019	04.04.2019	08.04.2019	12.04.2019	18.04.2019	20.04.2019	23.04.2019	26.04.2019	29.04.2019	
PM_{10} ($\mu g/m^3$)	83.1	80.1	82.1	83.5	81.5	82.6	80.1	82.8	81.8	100
$PM_{2.5}$ ($\mu g/m^3$)	42.5	41.8	42.1	42.5	40.1	42.8	41.8	42.5	43.8	60
SO_2 ($\mu g/m^3$)	7.20	8.20	8.50	7.20	6.80	7.20	6.80	8.20	7.20	80
NOx ($\mu g/m^3$)	28.50	30.00	31.20	28.50	25.00	26.50	25.00	30.00.	26.50	80

Average PM_{10} = 81.95 ($\mu g/m^3$), $PM_{2.5}$ = 42.21 ($\mu g/m^3$), SO_2 = 7.47 ($\mu g/m^3$), NOx = 27.65 ($\mu g/m^3$),

Date: 10.05.2019

Authorized Signatory :

MAY-2019

SUMMARY REPORT FOR THE MONTH OF MAY, 2019

1.	Name of the Industry	:	M/S. Electrosteel Castings Limited
2.	Address	:	Haldia Works Kasberia, P.O. – Shivramnagar, Pin - 721635

LOCATION: Dakshin Kashberia- South side of the Factory (Outside Factory Premises)

Parameters	Sampling Date									Limit as per NAAQ Standards (24 hours) (Schedule VII)
	02.05.2019	07.05.2019	10.05.2019	13.05.2019	16.05.2019	21.05.2019	24.05.2019	27.05.2019	29.05.2019	
PM_{10} ($\mu g/m^3$)	91.5	86.5	81.2	82.6	84.5	85.1	86.2	82.1	80.5	100
$PM_{2.5}$ ($\mu g/m^3$)	46.1	47.1	46.8	41.8	43.2	42.8	43.8	41.8	42.6	60
SO_2 ($\mu g/m^3$)	6.50	6.80	5.80	6.20	5.60	6.20	5.60	5.20	5.80	80
NOx ($\mu g/m^3$)	25.0	26.5	25.0	26.8	25.0	26.5	25.0	24.5	23.5	80

Average PM_{10} = 84.46 ($\mu g/m^3$), $PM_{2.5}$ = 44.00 ($\mu g/m^3$), SO_2 = 5.96 ($\mu g/m^3$), NOx = 25.31 ($\mu g/m^3$),

Continued.... Page 2

LOCATION: Main Gate of Ferro Alloy Plant (Inside Factory Premises)

Parameters	Sampling Date									Limit as per NAAQ Standards (24 hours) (Schedule VII)
	02.05.2019	07.05.2019	10.05.2019	13.05.2019	16.05.2019	21.05.2019	24.05.2019	27.05.2019	29.05.2019	
PM_{10} ($\mu g/m^3$)	87.2	85.4	89.2	83.5	82.6	89.5	86.5	86.5	84.8	100
$PM_{2.5}$ ($\mu g/m^3$)	50.2	52.1	53.6	52.5	49.1	52.6	48.2	51.6	48.6	60
SO_2 ($\mu g/m^3$)	6.50	7.20	6.20	5.80	5.80	5.60	6.20	5.80	6.50	80
NOx ($\mu g/m^3$)	28.5	30.0	26.5	25.0	26.5	25.0	28.5	25.0	26.0	80

Average PM_{10} = 86.13 ($\mu g/m^3$), $PM_{2.5}$ = 50.94 ($\mu g/m^3$), SO_2 = 6.17 ($\mu g/m^3$), NOx = 26.77 ($\mu g/m^3$),

Continued.... Page 3

LOCATION: Kashberia Uttarpally (North Side) (Outside Factory Premises)

Parameters	Sampling Date									Limit as per NAAQ Standards (24 hours) (Schedule VII)
	02.05.2019	07.05.2019	10.05.2019	13.05.2019	16.05.2019	21.05.2019	24.05.2019	27.05.2019	29.05.2019	
PM_{10} ($\mu g/m^3$)	81.5	82.5	85.3	80.1	86.2	80.10	86.2	80.1	89.5	100
$PM_{2.5}$ ($\mu g/m^3$)	46.1	45.2	48.5	43.2	45.1	42.8	49.2	43.1	48.5	60
SO_2 ($\mu g/m^3$)	7.20	6.50	8.20	7.20	7.80	6.50	8.20	7.20	7.50	80
NOx ($\mu g/m^3$)	30.0	26.5	35.0	26.5	28.2	25.0	25.0	29.5	31.2	80

Average PM_{10} = 83.50 ($\mu g/m^3$), $PM_{2.5}$ = 45.74 ($\mu g/m^3$), SO_2 = 7.36 ($\mu g/m^3$), NOx = 28.54 ($\mu g/m^3$),

LOCATION: Kishmat Shibramnagar West side (Outside Factory Premises)

Parameters	Sampling Date									Limit as per NAAQ Standards (24 hours) (Schedule VII)
	02.05.2019	07.05.2019	10.05.2019	13.05.2019	16.05.2019	21.05.2019	24.05.2019	27.05.2019	29.05.2019	
PM_{10} ($\mu g/m^3$)	86.2	91.5	80.1	82.5	83.2	85.1	86.5	83.2	81.5	100
$PM_{2.5}$ ($\mu g/m^3$)	45.1	48.2	43.5	46.2	43.8	46.5	47.2	43.1	42.5	60
SO_2 ($\mu g/m^3$)	7.80	8.20	7.10	7.50	6.80	7.50	7.80	7.20	6.50	80
NOx ($\mu g/m^3$)	30.0	35.0	30.0	32.5	25.0	28.5	30.0	28.5	26. 5	80

Average PM_{10} = 84.42 ($\mu g/m^3$), $PM_{2.5}$ = 45.12 ($\mu g/m^3$), SO_2 = 7.37 ($\mu g/m^3$), NOx = 29.93 ($\mu g/m^3$),

Date: 12.06.2019

Authorized Signatory :

JUNE-2019

SUMMARY REPORT FOR THE MONTH OF JUNE, 2019

1.	Name of the Industry	:	M/S. Electrosteel Castings Limited (Ferro Alloy Plant)
2.	Address	:	Haldia , Kasberia, P.O. – Shivramnagar, Pin - 721635

LOCATION: LOCATION: Dakshin Kashberia- South side of the Factory (Outside Factory Premises)

Parameters	Sampling Date							Limit as per NAAQ Standards (24 hours) (Schedule VII)
	03.06.2019	06.06.2019	11.06.2019	14.06.2019	19.06.2019	22.06.2019	25.06.2019	
PM_{10} ($\mu g/m^3$)	81.2	76.5	78.2	80.1	78.5	76.2	78.5	100
$PM_{2.5}$ ($\mu g/m^3$)	49.2	48.5	46.2	49.1	46.5	45.2	48.5	60
SO_2 ($\mu g/m^3$)	6.50	6.20	7.50	8.20	7.50	6.80	7.20	80
NOx ($\mu g/m^3$)	25.0	23.50	28.50	30.0	25.0	23.80	25.00	80

Average $PM_{2.5}$ = 47.6 ($\mu g/m^3$), PM_{10} = 78.45 ($\mu g/m^3$), SO_2 = 7.12 ($\mu g/m^3$), NOx = 25.82 ($\mu g/m^3$),

Continued.... Page 2

LOCATION: Main Gate of Ferro Alloy Plant (Inside Factory Premises)

Parameters	Sampling Date							Limit as per NAAQ Standards (24 hours) (Schedule VII)
	03.06.2019	06.06.2019	11.06.2019	14.06.2019	19.06.2019	22.06.2019	25.06.2019	
PM_{10} ($\mu g/m^3$)	83.5	89.2	86.5	82.8	84.1	85.1	82.6	100
$PM_{2.5}$ ($\mu g/m^3$)	43.10	47.80	48.5	46.2	46.8	45.1	46.2	60
SO_2 ($\mu g/m^3$)	7.20	6.50	6.80	6.50	7.20	6.80	6.50	80
NOx ($\mu g/m^3$)	25.0	23.50	25.0	23.80	28.50	25.0	23.50	80

Average $PM_{2.5}$ = 46.24 ($\mu g/m^3$), PM_{10} = 84.82 ($\mu g/m^3$), SO_2 =6.78 ($\mu g/m^3$), NOx = 24.90($\mu g/m^3$),

Continued.... Page 3

LOCATION: Kashberia Uttarpally (North Side) (Outside Factory Premises)

Parameters	Sampling Date							Limit as per NAAQ Standards (24 hours) (Schedule VII)
	03.06.2019	06.06.2019	11.06.2019	14.06.2019	19.06.2019	22.06.2019	25.06.2019	
PM_{10} ($\mu g/m^3$)	86.1	86.2	81.8	84.5	89.1	86.1	83.5	100
$PM_{2.5}$ ($\mu g/m^3$)	51.2	51.1	52.1	53.2	54.1	51.2	50.1	60
SO_2 ($\mu g/m^3$)	6.50	7.80	8.20	6.80	7.50	8.20	7.80	80
NOx ($\mu g/m^3$)	25.0	30.0	31.5	25.0	28.5	30.0	26.5	80

Average $PM_{2.5}$ = 51.85 ($\mu g/m^3$), PM_{10} = 85.32 ($\mu g/m^3$), SO_2 = 7.54 ($\mu g/m^3$), NOx = 28.07 ($\mu g/m^3$),

LOCATION: Kishmat Shibramnagar West side (Outside Factory Premises)

Parameters	Sampling Date							Limit as per NAAQ Standards (24 hours) (Schedule VII)
	03.06.2019	06.06.2019	11.06.2019	14.06.2019	19.06.2019	22.06.2019	25.06.2019	
PM_{10} ($\mu g/m^3$)	76.2	81.2	80.5	83.1	81.8	86.1	81.2	100
$PM_{2.5}$ ($\mu g/m^3$)	48.2	53.1	51.2	52.6	50.1	52.1	51.2	60
SO_2 ($\mu g/m^3$)	6.50	7.20	8.20	7.50	8.0	7.20	7.80	80
NOx ($\mu g/m^3$)	25.0	26.50	30.0	26.50	29.50	25.0	28.50	80

Average $PM_{2.5}$ = 51.21 ($\mu g/m^3$), PM_{10} = 81.44 ($\mu g/m^3$), SO_2 = 7.48 ($\mu g/m^3$), NOx = 27.28 ($\mu g/m^3$),

Date : 08.07.2019

Authorized Signatory :

SEPTEMBER-2019

SUMMARY REPORT FOR THE MONTH OF SEPTEMBER, 2019

1.	Name of the Industry	:	M/S. Electrosteel Castings Limited (Ferro Alloy Plant)
2.	Address	:	Haldia , Kasberia, P.O. – Shivramnagar, Pin - 721635

LOCATION: LOCATION: Dakshin Kashberia- South side of the Factory (Outside Factory Premises)

Parameters	Sampling Date				Limit as per NAAQ Standards (24 hours) (Schedule VII)
	18.09.2019	21.09.2019	26.09.2019	29.09.2019	
$PM_{2.5}$ ($\mu g/m^3$)	49.10	48.60	49.50	46.20	60
PM_{10} ($\mu g/m^3$)	80.10	78.50	81.20	78.50	100
SO_2 ($\mu g/m^3$)	6.80	6.20	7.20	6.20	80
NOx ($\mu g/m^3$)	25.00	23.50	26.80	25.00	80

Average $PM_{2.5}$ = 48.35 ($\mu g/m^3$), PM_{10} = 79.57 ($\mu g/m^3$), SO_2 = 6.60 ($\mu g/m^3$), NOx = 25.07 ($\mu g/m^3$),

Continued.... Page 2

LOCATION: Main Gate of Ferro Alloy Plant (Inside Factory Premises)

Parameters	Sampling Date				Limit as per NAAQ Standards (24 hours) (Schedule VII)
	18.09.2019	21.09.2019	26.09.2019	29.09.2019	
$PM_{2.5}$ ($\mu g/m^3$)	53.50	51.80	50.10	47.20	60
PM_{10} ($\mu g/m^3$)	91.20	93.20	92.50	86.00	100
SO_2 ($\mu g/m^3$)	7.80	8.20	7.20	6.80	80
NOx ($\mu g/m^3$)	28.50	26.50	20.00	23.50	80

Average $PM_{2.5}$ = 50.65 ($\mu g/m^3$), PM_{10} = 90.72 ($\mu g/m^3$), SO_2 =7.50 ($\mu g/m^3$), NOx = 24.62($\mu g/m^3$),

Continued.... Page 3

LOCATION: Kashberia Uttarpally (North Side) (Outside Factory Premises)

Parameters	Sampling Date				Limit as per NAAQ Standards (24 hours) (Schedule VII)
	18.09.2019	21.09.2019	26.09.2019	29.09.2019	
$PM_{2.5}$ ($\mu g/m^3$)	51.80	49.50	53.20	54.80	60
PM_{10} ($\mu g/m^3$)	93.10	84.50	81.80	90.10	100
SO_2 ($\mu g/m^3$)	7.80	7.20	6.80	6.50	80
NOx ($\mu g/m^3$)	26.50	25.00	23.50	25.00	80

Average $PM_{2.5}$ = 52.32 ($\mu g/m^3$), PM_{10} = 87.37 ($\mu g/m^3$), SO_2 = 7.07 ($\mu g/m^3$), NOx = 25.00 ($\mu g/m^3$),

LOCATION: Kishmat Shibramnagar West side (Outside Factory Premises)

Parameters	Sampling Date				Limit as per NAAQ Standards (24 hours) (Schedule VII)
	18.09.2019	21.09.2019	26.09.2019	29.09.2019	
$PM_{2.5}$ ($\mu g/m^3$)	46.20	45.10	49.50	45.80	60
PM_{10} ($\mu g/m^3$)	81.50	78.20	86.20	80.10	100
SO_2 ($\mu g/m^3$)	7.20	6.80	6.80	6.50	80
NOx ($\mu g/m^3$)	25.00	23.50	26.50	25.00	80

Average $PM_{2.5}$ = 46.65 ($\mu g/m^3$), PM_{10} = 81.50 ($\mu g/m^3$), SO_2 = 6.82 ($\mu g/m^3$), NOx = 25.00 ($\mu g/m^3$),

Date : 03.10.2019

Authorized Signatory :

Annexure-4

ENVIROCHECK

Recognised by MoEF&CC, WBPCB, JSPCB & OSPCB
Accredited by NABL (ISO/IEC 17025:2005)
Certified by ISO 9001:2015, ISO 14001:2015 & OHSAS 18001:2007

TEST REPORT

I.	Name of the Industry/Factory/Company	:	Electro Steel Castings Limited (Ferro Alloy Plant)
II.	Address	:	Works – Kashberia, P.O – Shivramnagar, Haldia, District – Purba Medinipore, Pin – 721635
III.	Date of Sampling	:	26/09/2019
IV.	Reporting Date	:	30/09/2019
V.	Report No	:	410/EC/M/N/19-20
VI.	Method No	:	IS: 9989 – 1981
VII.	Time of Duration of Noise	:	20 Minutes
VIII.	Monitoring Time Start (Day Time)	:	2:00 – 3:50 P.M
IX.	Monitoring Time Start (Night Time)	:	10:00 – 11:40 P.M
X.	Height from Ground Level	:	4 feet
XI.	Distance of Source	:	3 meter
XII.	Type of Industry	:	Ferro Alloy Plant
XIII.	Sample Monitoring by	:	Mr. Kaushik Podder

RESULT OF NOISE LEVEL STUDY

MONITORING IN FERRO-ALLOY PLANT (DAY TIME)

Sl. No.	Location	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	Min dB(A)	Max dB(A)	Average dB(A	Leq dB(A)
1.	Main Gate (West Side)	68.2	66.2	70.0	67.7	69.6	68.5	67.4	65.4	70.2	63.1	63.1	70.2	67.63	67.10
2.	East Side Boundary Wall	67.0	66.4	66.9	66.7	65.8	70.2	70.3	66.6	67.2	63.5	63.5	70.3	67.06	67.80
3.	South Side Boundary Wall (Towards COP Coal Shed)	68.0	69.6	70.5	71.2	72.6	73.4	73.0	72.8	70.0	71.6	68.0	73.4	71.27	71.28
4.	North Side Boundary Wall (Towards Pattern Shop)	70.9	67.2	66.4	68.3	69.2	70.0	69.1	67.2	67.4	65.2	65.2	70.9	68.09	68.50
5.	Limit	75													

ELECTROSTEEL CASTINGS LIMITED Ferro Alloy Plant

H.O. : 63/B, Rastraguru Avenue, Kolkata - 700028 (033-25792891/25497490, Fax : 033-25299141
Laboratory : 189,190&192 Rastraguru Avenue, Kolkata - 700028 (033-25792889
Email : envcheck@cal2.vsnl.net.in/envirocheck50@gmail.com / Website : www.envirocheck.org
Branch Office : - Siliguri - Haldia - Durgapur - Dhanbad - Gangtok - Port Blair - Dehradun - New Delhi
Overseas : - UAE - Qatar - Netherlands

RESULT OF NOISE LEVEL STUDY

MONITORING IN FERRO-ALLOY PLANT (NIGHT TIME)

Sl. No.	Location	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	Min dB(A)	Max dB(A)	Average dB(A	Leq dB(A)
1.	Main Gate (West Side)	61.3	62.4	63.0	63.4	63.7	62.5	63.2	62.6	63.9	64.2	61.3	64.2	63.02	62.99
2.	East Side Boundary Wall	57.0	57.5	61.5	61.2	62.2	60.5	59.9	60.5	62.3	59.2	57.0	62.3	60.18	60.10
3.	South Side Boundary Wall (Towards COP Coal Shed)	62.1	62.2	64.0	63.4	64.4	65.1	65.2	64.8	63.7	62.9	62.1	65.2	63.78	63.12
4.	North Side Boundary Wall (Towards Pattern Shop)	63.4	63.6	66.0	65.6	65.8	63.7	64.8	65.9	65.4	66.1	63.4	66.1	65.03	64.99
5.	Limit	70													

** Mean of Leq - Equivalent to Sound Energy

Category Area	Limit in Leq dB(A)	
	Day Time dB(A)	Night Time dB(A)
A. Industrial Area	75	70
B. Commercial Area	65	55
C. Residential Area	55	45
D. Silence Zone	50	40

**Day Time is reckoned in between 6:00 A.M & 10:00 P.M

**Night Time is reckoned in between 10:00 P.M & 6:00 A.M

(Central Pollution Control Board, Ministry of Environment & Forests Government of India) & (Department of Environment, Government of West Bengal)

Report Print Date: 30/09/2019

>End of Report<

ELECTROSTEEL CASTINGS LIMITED Ferro Alloy Plant

Authorised Signatory with Stamp

ENVIROCHECK Kolkata 700 028 189, Rastraguru Avenue

AMBIENT NOISE LEVEL STUDY

I.	Name of the Industry/Factory/Company	:	Electro Steel Castings Limited (Ferro Alloy Plant)
II.	Address	:	Works - Kashberia, P.O - Shivramnagar, Haldia, District - Purba Medinipore, Pin - 721635
III.	Date of Sampling	:	20/06/2019
IV.	Reporting Date	:	27/06/2019
V.	Report No	:	287/EC/M/N/19-20
VI.	Method No	:	IS: 9989 - 1981
VII.	Time of Duration of Noise	:	20 Minutes
VIII.	Monitoring Time Start (Day Time)	:	11:30 - 1:20 P.M
IX.	Monitoring Time Start (Night Time)	:	10:00 - 11:50 P.M
X.	Height from Ground Level	:	4 feet
XI.	Distance of Source	:	3 miter
XII.	Type of Industry	:	Ferro Alloy Plant
XIII.	Sample Monitoring by	:	Mr. Kaushik Podder

RESULT OF NOISE LEVEL STUDY

MONITORING IN FERRO-ALLOY PLANT (DAY TIME)

Sl. No.	Location	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	Min dB(A)	Max dB(A)	Average dB(A	Leq dB(A)
1.	Main Gate (West Side)	69.2	72.0	69.5	69.3	71.5	70.3	71.6	70.2	69.5	70.8	69.2	72.0	70.39	70.50
2.	East Side Boundary Wall	67.0	70.4	67.2	68.9	67.5	69.2	70.1	68.3	68.0	67.6	67.0	70.4	68.42	68.57
3.	South Side Boundary Wall (Towards COP Coal Shed)	68.5	73.2	69.6	71.5	72.8	70.5	69.9	72.3	70.1	69.6	68.5	73.2	70.80	71.06
4.	North Side Boundary Wall (Towards Pattern Shop)	68.2	73.5	70.5	69.2	68.5	71.3	72.5	72.8	70.6	71.7	68.2	73.5	70.88	71.21
5.	Limit	75													

ELECTROSTEEL CASTINGS LIMITED Ferro Alloy Plant

RESULT OF NOISE LEVEL STUDY

MONITORING IN FERRO-ALLOY PLANT (NIGHT TIME)

Sl. No.	Location	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	Min dB(A)	Max dB(A)	Average dB(A	Leq dB(A)
1.	Main Gate (West Side)	66.8	70.2	67.5	68.3	69.4	67.5	69.2	68.1	67.2	70.0	66.8	70.2	68.42	68.57
2.	East Side Boundary Wall	65.2	68.5	66.3	67.5	68.1	67.9	66.3	67.4	66.5	66.2	65.2	68.5	66.99	67.10
3.	South Side Boundary Wall (Towards COP Coal Shed)	61.5	67.5	62.8	63.5	64.9	65.3	66.3	61.9	67.2	66.3	61.5	67.5	64.72	65.18
4.	North Side Boundary Wall (Towards Pattern Shop)	65.0	68.6	66.3	67.5	66.3	65.7	67.2	66.1	66.3	65.9	65.0	68.6	66.49	66.60
5.	Limit	70													

** Mean of L_{eq} - Equivalent to Sound Energy

Category Area	Limit in Leq dB(A) Day Time dB(A)	Night Time dB(A)
A. Industrial Area	75	70
B. Commercial Area	65	55
C. Residential Area	55	45
D. Silence Zone	50	40

**Day Time is reckoned in between 6:00 A.M & 10:00 P.M

**Night Time is reckoned in between 10:00 P.M & 6:00 A.M

(Central Pollution Control Board, Ministry of Environment & Forests Government of India) & (Department of Environment, Government of West Bengal)

Report Print Date: 27/06/2019

ELECTROSTEEL CASTINGS LIMITED Ferro Alloy Plant

Authorized Signatory with Stamp

INTERNAL AMBIENT NOISE MONITORING IN FERRO-ALLOY PLANT (Day Time)							
Sl No	LOCATION	AMBIENT NOISE LEVEL -db(A)					
		Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19
1	Main Gate (West Side)	70	63	64	67	68.00	69
2	East side Boundary wall	68	65	69	70	66.00	65
3	Near Furnace building (West side boundary wall)	71	68	70	72	70.00	68
4	North Side Boundary wall (Towards Pattern Shop)	72	69	67	69	67.00	68
6	LIMIT	75					

NTERNAL AMBIENT NOISE MONITORING IN FERRO-ALLOY PLANT (Night Time)							
Sl No	LOCATION	AMBIENT NOISE LEVEL -db(A)					
		Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19
1	Main Gate (West Side)	67	62	63	65	67	65
2	East side Boundary wall	66	58	65	67	65	63
3	Near Furnace building (West side boundary wall)	67	63	67	68	66	64
4	North Side Boundary wall (Towards Pattern Shop)	68	66	69	68	69	66
6	LIMIT	70					

ELECTROSTEEL CASTINGS LIMITED
Ferro Alloy Plant

PRE-EMPLOYMENT HEALTH CHECK-UP — FERRO ALLOY PLANT — Annexure-5

SL No.	NAME	Nature of job/ Occupation	Date of Joining	General health check up as per form -25				Patiological health check up as per Doctor advice																				
				AGE	HT (cm)	WT (Kg)	BP mm/Hg	BLOOD													ECG	CXR	PFT	AUDIOMETRY	EYE TEST	KNEE JERK (KNEES SENSATION)	PLANTER REFLEX(FOOT SENSATION)
								TC	N	L	M	E	B	ES	HB%	ABO-RH	Manganese (IN BLOOD) ug/L	Manganese (IN URINE) ug/L	Calcium(in Blood) mg/dl	Phosphate (in Blood) mg/dl		RESULT					
1	TARUN GHATA	ELECTRICAL	24-04-2019	33	165	72	138/82	7600	58	35	3	4	0	14	15.1	B(+VE)	10.78	1.49	10	6.63	WNL	WNL	WNL	Normal	Normal	Normal	flexor
2	ASHUTOSH PANDA	ELECTRICAL	04-05-2019	28	160	74	112/80	8850	55	36	4	5	0	12	15.3	A(+VE)	9.07	<1.0	10.1	5.18	WNL	WNL	WNL	Normal	Normal	Normal	flexor
3	BARUN KUMAR DAS	M/M	08-05-2019	36	170	83	120/80	7300	59	33	4	4	0	16	14	A(+VE)	14.25	<1	9.6	4.64	WNL	WNL	WNL	Normal	Normal	Normal	flexor
4	UPENDRA PRATAP SINGH	OPERATION	09-05-2019	52	172	81	128/90	7650	57	36	3	4	0	18	14.6	O(+VE)	13.46	8.64	9.6	5.66	WNL	WNL	WNL	Normal	Normal	Normal	flexor
5	BAPAN PARUI	MM	09-05-2019	38	168	72	120/80	7400	62	30	3	5	0	14	20	B(+VE)	10.18	3.9	9.6	5.63	WNL	WNL	WNL	Normal	Normal	Normal	flexor
6	DIPAK SHIT	MM	09-05-2019	37	170	76	116/76	7500	60	29	3	8	0	20	13.7	O(+VE)	11.73	2.85	9.4	6.07	WNL	WNL	WNL	Normal	Normal	Normal	flexor
7	SUKDEV PAUL	RO(MM)	09-05-2019	24	162	55	120/86	8200	65	27	3	5	0	22	14.9	A(+VE)	8.53	<1	9.7	5.58	WNL	WNL	WNL	Normal	Normal	Normal	flexor
8	SK.MAIDUL	MM	09-05-2019	33	160	64	120/80	7450	61	30	3	6	0	16	14.8	B(+VE)	14.32	2.14	9.6	4.86	WNL	WNL	WNL	Normal	Normal	Normal	flexor
9	SANJIB BERA	ELECTRICAL	09-05-2019	24	158	58	120/80	7900	63	29	3	5	0	14	14.4	B(+VE)	12.48	2.04	9	4.08	WNL	WNL	WNL	Normal	Normal	Normal	flexor
10	SUDHARSAN GHUCHAITE	ELECTRICAL	09-05-2019	31	165	54	118/86	7900	60	30	4	6	0	24	14.2	B(+VE)	7	1.31	9.8	4.59	WNL	WNL	WNL	Normal	Normal	Normal	flexor
11	TAPAS SAMANTA	ELECTRICAL	09-05-2019	24	167	50	106/78	7900	56	35	3	6	0	14	14.5	O(+VE)	10.3	1.08	8.9	4.76	WNL	WNL	WNL	WNL		Normal	flexor
12	KARTIK PATAR	TAPPER	10-05-2019	35	165	77	120/80	5900	58	35	3	4	0	20	13.7	A(+VE)	14.18	7.4	9.6	6.74	WNL	WNL	WNL	Normal	Normal	Normal	flexor
13	HARU MUNDA	BUFFER MAN	10-05-2019	30	170	58	118/76	5700	60	32	3	5	0	24	13.5	B(+VE)	12.22	6.88	9	3.36	WNL	WNL	WNL	Normal	Normal	Normal	flexor
14	PALAS PATTANAYAK	ELECTRICAL	15-05-2019	33	178	80	122/82	7800	55	42	1	2	0	10	13.6	O(+VE)	9.37	<1	9.3	4.96	WNL	WNL	WNL	Normal	Normal	Normal	flexor
15	ARINDAM MUSIB	OPERATOR	15-05-2019	35	158	71	130/90	7650	59	33	3	5	0	12	15.6	B(+VE)	9.94	8.25	9.5	6.31	WNL	WNL	WNL	Normal	Normal	Normal	flexor
16	MANISH KUMAR SING	CRO	15-05-2019	26	162	47	116/82	7000	56	36	3	5	0	22	15.6	O(+VE)	9.64	8.24	9.6	4.61	WNL	WNL	WNL	Normal	Normal	Normal	flexor
17	SAMBHU NATH SAHA	SUPERVISOR	16-05-2019	52	178	64	122/82	8900	59	34	3	4	0	15	15.3	O(+VE)	14.62	8.46	9.1	6.08		WNL	DUE	WNL	Normal	Normal	flexor
18	GOUTAM ROY	SHIFT INCHARGE	16-05-2019	27	173	76	116/76	8300	59	35	3	3	0	20	13.8	A(-VE)	6.94	5.32	9.5	5.67	WNL	WNL	WNL	Normal	Normal	Normal	flexor
19	NARU MUNDA	TAPING HELPER	16-05-2019	28	167	59	112/76	6400	56	34	4	6	0	24	12.4	A(+VE)	9.48	6.94	8.8	5.73	WNL	WNL	WNL	Normal	Normal	Normal	flexor

Dr. Asim Kumar
M.B.B.S. (Kol. Univ.)
Reg. No.
Factory M...
ELECTROSTEEL ... LTD.
Hansia
6/11/19

		Nature of job/ Occupation	Date of Joining	General health check up as per form -25				Patlological health check up as per Doctor advice																			
				AGE	HT (cm)	WT (Kg)	BP mm/Hg	BLOOD													ECG	CXR	PFT	AUDIOMETRY	EYE TEST	KNEE JERK (KNEES SENSATION)	PLANTER REFLEX(FOOT SENSATION)
								TC	N	L	M	E	B	ES	HB%	ABO-RH	Manganese(IN BLOOD) ug/L	Manganese(IN URINE) ug/L	Calcium(in Blood) mg/dl	Phosphate (in Blood) mg/dl		RESULT					
20	DIBAKAR PATAR	TAPPER	16-05-2019	21	166	57	120/80	8600	66	26	3	5	0	35	14.2	O(+VE)	8.46	6.92	10.4	5.88	WNL	WNL	WNL	Normal	Normal	Normal	flexor
21	UJJAL MURMU	HELPER	16-05-2019	32	163	51	118/80	8100	57	33	4	6	0	28	13.5	AB(+VE)	12.92	6.99	9	5.8	WNL	WNL	WNL	Normal	Normal	Normal	flexor
22	KALIPADA MURMU	HELPER	16-05-2019	29	172	52	118/78	6300	57	35	4	4	0	26	13.4	B(+VE)	5.76	6.21	8.9	5.66	WNL	WNL	WNL	Normal	Normal	Normal	flexor
23	LAKSHIKANTA HANSDA	HELPER	16-05-2019	21	168	46	116/76	8000	63	28	4	5	0	30	14.7	B(+VE)	4.94	5.39	8.8	3.19	WNL	WNL	WNL	Normal	Normal	Normal	flexor
25	NASIM SK	OPERATOR	16-05-2019	24	158	62	112/76	6800	61	36	2	1	0	14	13.6	A(+VE)	15.22	1.41	9.3	3.89	WNL	WNL	WNL	Normal	Normal CV	Normal	flexor
26	AZUMUDIN ANSARI	BUFFER MAN	16-05-2019	24	166	62	120/80	8500	63	28	3	6	0	28	14.9	O(+VE)	6.32	7.26	9.5	5.91	WNL	WNL	WNL	Normal	Normal	Normal	flexor
27	AZARUDDIN ANSARI	BUFFER MAN	16-05-2019	25	161	55	112/76	5850	60	33	3	4	0	18	16.2	O(+VE)	6.58	2.92	8.5	5.25	WNL	WNL	WNL	Normal	Normal	Normal	flexor
28	MUKTAR ANSARI(MD.MUKTER)	TAPPER	16-05-2019	39	166	66	110/70	5900	59	35	3	3	0	25	14.3	O(+VE)	12.22	6.47	8.6	5.78	WNL	WNL	WNL	Normal	Normal	Normal	flexor
29	RATAN BALA	SHIFT INCHARGE	16-05-2019	45	157	59	130/90	7400	57	34	3	6	0	28	15.6	A(+VE)	7.24	6.39	9.3	6.66	WNL	WNL	WNL	Normal	Normal	Normal	flexor
30	UTPAL PATRA	RAW METERIAL INCHARGE	16-05-2019	40	176	71	130/90	8800	56	36	3	5	0	20	13.4	O(+VE)	5.68	4.94	9.8	5.7	WNL	WNL	WNL	Normal	Normal	Normal	flexor
31	TAPAS KUMAR SAMANTA	MM	17-05-2019	30	158	64	118/80	7450	62	29	3	6	0	24	12.8	O(-VE)	7.96	6.52	9.8	4.65	WNL	WNL	WNL	Normal	Normal	Normal	flexor
32	PULAK GHORAI	OPERATOR	17-05-2019	25	165	51	100/72	4800	56	32	2	#	0	8	14.9	O(+VE)	13.29	1.52	9.7	4.34	WNL	WNL	WNL	Normal	Normal	Normal	flexor
33	SUBHAS CHATTERJERE	OPERATOR	17-05-2019	37	170	72	126/84	7800	57	35	4	4	0	20	13.2	O(+VE)	5.29	6.68	9.6	5.79	WNL	WNL	WNL	Normal	Normal	Normal	flexor
34	AMARESH TANTI	MM	18.05.2019	25	155	48	120/80	7450	54	38	3	5	0	25	14.5	O(+VE)	4.84	4.82	9.4	5.32	WNL	WNL	WNL	Normal	Normal	Normal	flexor
35	AMAR MAJI	MM	21.05.2019	33	152	48	118/80	5900	57	34	3	6	0	26	16	B(+VE)	4.82	5.36	9.3	5.48	WNL	WNL	WNL	Normal	Normal	Normal	flexor
36	SANDIP ROUL	MM	21.05.2019	27	163	63	128/84	6800	61	31	3	5	0	24	14.5	A(+VE)	7.88	8.78	9.4	6.87	WNL	WNL	WNL	WNL	Normal	Normal	flexor
37	PRASHANT PANDEY	LAB	22.05.2019	34	160	79	122/84	6900	62	30	4	4	0	22	13.8	O(+VE)	12.46	6.64	9.4	3.94	WNL	WNL	WNL	WNL	Normal	Normal	flexor
38	MANPURAN MAHATO	C.R.O	23.05.2019	23	168	55	118/78	7700	59	34	3	4	0	16	14.5	B(+VE)	7.92	3.82	9.2	4.58	WNL	WNL	WNL	Normal	Normal	Normal	flexor
39	TUSHAR SAHU	SHIFT INCHARGE	27.05.2019	25	152	58	118/78	7350	61	33	3	3	0	12	13.8	A(+VE)	7.49	6.38	8.8	4.94	WNL	WNL	WNL	Normal	Normal	Normal	flexor

		Nature of job/ Occupation	Date of Joining	General health check up as per form -25				Patlological health check up as per Doctor advice																				
				AGE	HT (cm)	WT (Kg)	BP mm/Hg	BLOOD													ECG	CXR	PFT	AUDIOMETRY	EYE TEST	KNEE JERK (KNEES SENSATION)	PLANTER REFLEX(FOOT SENSATION)
								TC	N	L	M	E	B	ESI	HB%	ABO-RH	Manganese(IN BLOOD) ug/L	Manganese(IN URINE) ug/L	Calcium(in Blood) mg/dl	Phosphate (in Blood) mg/dl		RESULT					
40	PRASENJIT MUNDA	HELPER	03.06.2019	20	176	65	120/80	8800	65	28	2	5	0	10	14	O(+VE)	15.16	3.27	8.6	4.24	WNL	WNL	WNL	Normal	Normal	Normal	flexor
41	SUBHENDU MAJI	OPERATOR	03.06.2019	25	171	82	124/86	8650	56	36	3	5	0	25	15.7	O(+VE)	7.88	1.33	9.2	4.94	WNL	WNL	WNL	Normal	Normal	Normal	flexor
42	PRASANTA GHOSH	ASST FITTER	03.06.2019	33	168	56	116/76	5800	56	36	2	6	0	8	14	B(+VE)	15.88	<1	9.3	5.74	WNL	WNL	WNL	Normal	Normal	Normal	flexor
43	SUKUL MANDI	HELPER	03.06.2019	24	155	56	104/70	6200	58	34	2	6	0	16	13.6	AB(+VE)	8.99	<1	9.5	4.7	WNL	WNL	WNL	Normal		Normal	flexor
44	SUTARI MUNNA REDDY	ELECTRICAL	07.06.2019	22	169	54	116/76	6200	46	49	2	3	0	8	14	AB(+VE)	9.66	<1	9.5	4.64	WNL	WNL	WNL	Moderate SHNL	Normal	Normal	flexor
45	ANUP MONDAL	Daybin helper	08.06.2019	21	162	74	110/70	6800	48	42	2	8	0	20	13.2	A(+VE)	9.05	<1	9.5	4.83	WNL	WNL	WNL	Normal	Normal	Normal	flexor
46	RABINDRA NATH MUNDA	Daybin helper	08.06.2019	19	162	52	110/70	8100	62	32	2	4	0	16	14	A(+VE)	13.45	<1	9.7	2.74	WNL	WNL	WNL	Normal	Normal	Normal	flexor
47	ARUN BERA	Daybin helper	08.06.2019	45	158	42	122/84	6400	64	32	2	2	0	10	12.7	B(+VE)	10.3	1.49	9.5	5.89	WNL	WNL	WNL	BMCHL	Normal	Normal	flexor
48	SUMANTA DEY	TAPER	09.06.2019	34	170	75	118/78	7600	51	44	1	4	0	12	11.6	A(+VE)	9.43	<1	8.5	4.81	WNL	WNL	WNL	Normal	FIT WITH	Normal	flexor
49	BISWAJIT BARIK	FORKLIFT OPT.	09.06.2019	40	163	61	130/90	8500	55	38	2	5	0	14	16.7	B(+VE)	14.73	2.03	9.9	4.61	WNL	WNL	WNL	Normal	Normal	Normal	flexor
50	*GULAP ANSHARI*	HELPER	10.06.2019	25	163	65	116/76	6400	52	39	2	7	0	12	14	O(+VE)	9.73	3.72	9.6	5.64	WNL	WNL	WNL	Normal	Normal	Normal	flexor
51	PARITOSH MURMU	HELPER	10.06.2019	26	168	55	118/82	7800	52	40	2	6	0	18	13.6	B(+VE)	13.73	1.21	9.5	2.64	WNL	WNL	WNL	Normal	Normal	Normal	flexor
52	RAJU MAJI	SUPERVISOR	11.06.2019	32	170	69	120/80	8900	53	38	2	7	0	18	11.9	A(+VE)	3.01	1.74	9.01	5.53	WNL	WNL	WNL	Normal	Normal	Normal	flexor
53	AVIJIT ROY	SUPERVISOR	13.06.2019	28	163	62	118/78	7800	55	39	2	4	0	12	14.5	B(+VE)	9.65	2.85	9.4	6.58	WNL	WNL	WNL	Normal	Colour differentiation	Normal	flexor
54	PRASANJIT PALAI	SAMPLING HELPER	18.06.2019	23	168	60	110/70	6600	59	37	2	2	0	18	11.8	O(+VE)	8.21	<1	8.9	6.85	wnl	WNL	WNL	Normal	Normal	Normal	flexor

Dr. Asim Kumar Das
M.B.B.S. (Kol), AFIH
Reg. No.- 53455
Factory Medical Officer
ELECTROSTEEL CASTINGS LTD.
Haldia

26/11/19

SL No.	NAME	Nature of job/ Occupation	Date of Joining	General health check up as per form -25				Patiological health check up as per Doctor advice																				
				AGE	HT (cm)	WT (Kg)	BP mm/Hg	BLOOD													ECG	CXR	PFT	AUDIOMETRY	EYE TEST	KNEE JERK (KNEES SENSATION)	PLANTER REFLEX(FOOT SENSATION)
								TC	N	L	M	E	B	ESI	HB%	ABO-RH	Manganese(IN BLOOD) ug/L	Manganese(IN URINE) ug/L	Calcium(in Blood) mg/dl	Phosphate (in Blood) mg/dl		RESULT					
55	BINAY KR MAITI	C R O	19.06.2019	38	163	54	110/70	9600	64	30	2	4	0	8	13.2	B(+VE)	14.42	2.31	9.6	4.74	wnl	WNL	WNL	Normal	Normal	Normal	flexor
56	PRASENJIT BHUNIA	HELPER	19.06.2019	32	155	48	118/80	12100	50	36	2	#	0	22	13.2	B(+VE)	8.35	1.28	9.5	4.83	wnl	WNL	WNL	Normal	Normal	Normal	flexor
57	BISWAJIT MAJI	HELPER	19.06.2019	24	173	64	118/78	7800	58	39	1	2	0	18	11.8	B(+VE)	6.3	1.58	8.6	5.76	wnl	WNL	WNL	Normal	Normal	Normal	flexor
58	DAYAL NAYAK	FORKLIFT OPT.	25.06.2019	49	170	72	110/70	9200	59	32	2	7	0	10	14.5	B(+VE)	6.61	2.86	9.8	4.96	WNL	WNL	WNL	Normal	Normal	Normal	flexor
59	DHANESHWAR ROY	ELECTRICAL	25.06.2019	26	160	56	120/80	9200	72	20	1	7	0	22	13.2	B(+VE)	11.87	4.36	9.7	5.56	WNL	WNL	WNL	Normal	Normal	Normal	flexor
60	AJOY BAURI	METAL BREAKING	27.06.2019	24	160	58	118/78	8200	42	53	1	4	0	24	11.8	O(-VE)	10.29	11.72	8.89	4.43	WNL	WNL	WNL	Normal	Normal	Normal	flexor
61	HARIPADA BAURI	SAMPLING HELPER	02.07.2019	28	163	69	122/88	9800	54	41	2	3	0	16	13.6	B(+VE)	15.05	1.36	9.4	5.92	WNL	WNL	WNL	Normal	Normal	Normal	flexor
62	SANJIB KUMAR MANNA	SAMPLING HELPER	09.07.2019	21	174	82	120/80	8200	76	21	1	2	0	6	15.8	O(+VE)	16.42	2.06	9.8	5.1	WNL	WNL	WNL	Normal	Normal	Normal	flexor

26/11/19

Dr. Asim Das

FACTORY MEDICAL OFFICER

Dr. Asim Kumar Das
M.B.B.S. (Kol), AFIH
Reg. No.- 53435
Factory Medical Officer
ELECTROSTEEL CASTINGS LTD.