SHAKAMBHARI GROUP

BRAVO SPONGE IRON PRIVATE LIMITED

CIN: U27106WB1997PTC082921 | GSTIN: 19AACCB5058J1ZH | PAN: AACCB5058J | State: West Bengal | State Code: 19

Ref.: BSIPL/ES/2019-20

Date: 23rd, October, 2020

The Sr. Environmental Engineer
West Bengal Pollution Control Board
Asanso Regional Office
ADDA Commercial Market (2nd Floor),
Oppo. Asansol Fire Station,
GT Road, Asansol-713301
Dist-Paschim Burdwan (WB)

Sub: Environment Statement (FY: 2019-2020) of M/s Bravo Sponge Iron Pvt. Limited, Vill-Mahuda, PO-Rukni, Dist-Purulia (WB)-723145

Dear Sir,

With reference to above subject we are submitting herewith the Environment Statement (Form-V) for financial year ending 31st March, 2020 of M/s Bravo Sponge Iron Pvt, Limited, Vill-Mahuda, PO-Rukni, Dist-Purulia (WB) for your kind consideration please.

Kindly acknowledge our submission

Thanking you,

Yours faithfully,

for **Bravo Sponge Iron Pvt. Limited**

(Authorized Signatory)

Bravo Sponge Iron Pvt. Ltd. RUKNI PURULIA

Encl: As above.

Copy to: The Dy. Director General of Forests (Central) Eastern Regional Office, Ministry of Environment Forests & Climate Change, A/3, Chandrashekharpur, Bhubaneswar – 751023 (Odisha)

FORM – V
ENVIRONMENTAL STATEMENT
(See rule 14)

Environmental Statement for the financial year 2019-2020 ending with 31st March

PART-A

i. Name and address of the owner/occupier of the industry operation or process

Baidyanath Thakur
M/s Bravo Sponge Iron Pvt. Limited
Vill. – Mahuda, P.O. – Rukni,
P.S. – Para, District – Purulia (WB),
PIN – 723145

ii. Industry category Primary – **Large** *Secondary* – **Red**

iii. Production category – **Iron & Steel**

iv. Year of establishment – **2003-04 (Our Group has acquired this establishment in June 2015)**

v. Date of the last environmental statement submitted – **07.11.2019**

PART – B

Water and Raw Material Consumption:

i. Water consumption in m^3/d

Process: 88 m^3/d
Cooling: 280 m^3/d
Domestic: 15 m^3/d

Name of Products	Process water consumption (m^3) per unit (MT) of products	
	During the previous financial year (2018-19)	During the current financial year (2019-20)
Sponge Iron	0.19 m^3/T	0.18 m^3/T
Billet	0.89 m^3/T	0.65 m^3/T
Electricity	0.35 m^3/KW	0.39 m^3/KW

Bravo Sponge Iron Pvt. Ltd. RUKNI PURULIA

ii. Raw material consumption

Name of raw materials*	Name of Products	Consumption of raw material per unit of output	
		During the previous financial year (2018-19)	During the current financial year (2019-20)
DRI Division			
Iron Ore	Sponge Iron	1221.39 Kg/T	1486.69 Kg/T
Iron Ore Pellet		574.44 Kg/T	203.05 Kg/T
Coal		806.80 Kg/T	860.47 Kg/T
Dolomite		130.00 Kg/T	75.17 Kg/T
SMS Division			
Pig Iron	MS Billet	104.04 Kg/T	154.33 Kg/T
Sponge Iron		826.44 Kg/T	874.29 Kg/T
Scrap		287.31 Kg/T	149.83 Kg/T
Silico Manganese		9.16 Kg/T	15.71 Kg/T
CPP Division			
Coal Fines	Electricity	22.60 Kg/KW	6.99 Kg/KW
Dolochar		953.60 Kg/KW	775.83 Kg/KW

* ***Industry may use codes*** *if disclosing details of raw material would violate contractual obligations, otherwise all industries have to name the raw materials used.*

PART-C

Pollution discharged to environment/unit of output

(Parameter as specified in the consent issued)

(a) Water

Parameters	Unit	Quantity of Pollutants discharged (mass/day)	Concentration (mass/volume)	Percentage of variation from prescribed standards with reasons
Leakages, spillages and overflow water goes to ETP through Plant Drain Network and after treatment reused for Green Belt Development and dust suppression purpose.				

(b) Ambient Air Quality

Pollutants	Quantity of Pollutants discharged (mass/day)	Concentration of Pollutants discharged (µg/m^3)				Percentage of variation from prescribed standards with reasons
		Roof of Admin building (Eastern Side)	Near Main Gate (Western Side)	Mahuda Village (southern side)	Near Railway Siding (Northern Side)	
$PM_{2.5}$	Sampling time 24 hours	48.02	54.50	46.10	50.10	Within range
PM_{10}		76.38	85.12	78.20	84.25	
SO_2		8.50	9.20	7.80	7.85	
NO_x		28.50	32.50	25.00	28.50	

Monitoring reports attached

Bravo Sponge Iron Pvt. Ltd. RUKNI PURULIA

(c) Stack Monitoring Data

Pollutants	Location	Concentration of Pollutants discharged (mg/Nm^3)	Percentage of variation from prescribed standards with reasons
PM	DRI Kiln (1&2) Stack-1	30.10	Within the range
	DRI Kiln (3&4) Stack-2	39.73	
	AFBC Boiler	41.72	
	Induction Furnace	36.80	

Monitoring reports attached

PART – D

(As specified under Hazardous Wastes (Management & Handling Rules, 1989).

Hazardous Wastes	Total Quantity (MT)	
	During the current financial year (2018-19)	During the current financial year (2019-20)
From Process	NIL	NIL
From Pollution Control Facilities	NIL	NIL

Note: Used oil and waste cotton from cleaning and maintenance activities are collected and stored. Periodically handed over to Auth0rized recycler and common HWM facility.

PART – E

Solid Wastes	Total Quantity (MT)	
	During the current financial year (2018-19)	During the current financial year (2019-20)
From Process	7405	10117
From Pollution Control Facilities	30163	73874
Quantity recycled or reutilized within the unit	29712	38761

PART – F

Please specify the characteristics (in terms of concentration and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

Solid waste Type	Quantity (TPA)	Disposal System
Dolochar	33515	Used in CPP for power generation
Fly Ash	46200	Provide to Brick Manufactures
Bottom Ash/Bed Material	22050	Used for land filling in our facility
BF flue Dust from DRI	5386	Provided to Brick Manufactures after metal recovery
BF flue dust from SMS	238	Used for land filling
IF Slag	10117	Used for Road Construction and Land filling
MS Scrap & Mill Skull	5246	Reused in SMS

Bravo Sponge Iron Pvt. Ltd. RUKNI PURULIA

PART – G

Impact of the pollution control measures taken on conservation of natural resources and consequently on the cost of production.

List of ***Environmental Management Programme*** *(EMPs) are given below-*

Description	Expenditure for Pollution Control measures on Conservation of Natural Resources (Rs. in lakhs)
Total Cost towards Air Pollution Control Measures, Environmental Monitoring, EHS Management & training, Waste Management System, EHS, Green Belt Development (Plantation & Plant Maintenance), CSR, etc.	53.00

PART – H

Additional measures/investment proposal for environmental protection including abatement of pollution.

Already included in Part G.

We have done the massive plantation for green belt development with indigenous species in consultation with DFO.

PART – I

MISCELLANEOUS

Any other particulars in respect of environmental protection and abatement of pollution.

(1) We are complying all the directions given by the WBPCB, and getting regular Water & Air consents.

(2) Periodic Environmental Monitoring being done by NABL accredited laboratory to ascertain the efficiency of OCEMS installed and connected to CPCB server.

Enclosure List:

1) Copies of analysis report.

TEST REPORT

FORMAT NO : ENV/FM/37

Name of the Industry	:	Bravo Sponge Iron Pvt. Ltd.	Type of Industry	:	Steel & Power Unit
Address	:	Vill. – Mohuda. P.O. – Rukni, P.S. – Para, Purulia – 723145	Sampling Date	:	20.02.2020 – 21.02.2020
			Period of Analysis	:	24.02.2020 – 25.02.2020
			Date of Issue	:	26.02.2020

Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No	Type of Sample	:	Ambient Air
Sample ID No.	:	606A/EC/M/A/VII	Report No.	:	606A/EC/M/TR(A)/VII/19-20			

A] GENERAL INFORMATION

1.	Location of Sampling	:	On the Roof of Main Administrative Building (Eastern Side)
2.	Duration of Sampling	:	24 hrs. (09:00 a.m. – 09:00 a.m.)

B] METEOROLOGICAL INFORMATION

1.	Average Temperature (^{0}C)	:	26.50
2.	Average Relative Humidity (%)	:	72.50
3.	Barometric Pressure (mm of Hg)	:	756.0
4.	Smell or Odour	:	No Remarkable Smell
5.	Weather Condition	:	Clear sky

C] RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Concentration of $PM_{2.5}$	µg/m^3	USEPA 1997a, 40 CFR Part 50, Appendix L : 2006	48.02
2.	Concentration of PM_{10}	µg/m^3	IS 5182 (PART 23) : 2006	76.38
3.	Concentration of SO_2	µg/m^3	IS 5182 (Part 2) 2001 & ASTM D 2914-01 reapproved 2007: Sec. 11 (Vol. 11.07) : 2011	8.50
4.	Concentration of NO_2	µg/m^3	IS 5182 (Part 6) 2006 & ASTM D 1607-91 reapproved 2005 : Sec. 11 (Vol. 11.07) : 2011	28.50

Remarks :

Reviewed By :

(DurbadalChakraborty)
(Dy. Quality Manager)

Approved By :

(Dr. Ajoy Paul)
(Quality Manger)

TEST REPORT

FORMAT NO : ENV/FM/37

Name of the Industry	:	Bravo Sponge Iron Pvt. Ltd.	Type of Industry	:	Steel & Power Unit
Address	:	Vill. – Mohuda. P.O. – Rukni, P.S. – Para, Purulia – 723145	Sampling Date	:	20.02.2020 – 21.02.2020
			Period of Analysis	:	24.02.2020 – 25.02.2020
			Date of Issue	:	26.02.2020

Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No	Type of Sample	:	Ambient Air
Sample ID No.	:	606A/EC/M/A/IV	Report No.	:	606A/EC/M/TR(A)/IV/19-20			

A] GENERAL INFORMATION

1.	Location of Sampling	:	Near Main Gate
2.	Duration of Sampling	:	24 hrs. (09:30 a.m. – 09:30 a.m.)

B] METEOROLOGICAL INFORMATION

1.	Average Temperature (^{0}C)	:	26.50
2.	Average Relative Humidity (%)	:	72.50
3.	Barometric Pressure (mm of Hg)	:	756.0
4.	Smell or Odour	:	No Remarkable Smell
5.	Weather Condition	:	Clear sky

C] RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Concentration of $PM_{2.5}$	$\mu g/m^3$	USEPA 1997a, 40 CFR Part 50, Appendix L : 2006	54.50
2.	Concentration of PM_{10}	$\mu g/m^3$	IS 5182 (PART 23) : 2006	85.12
3.	Concentration of SO_2	$\mu g/m^3$	IS 5182 (Part 2) 2001 & ASTM D 2914-01 reapproved 2007: Sec. 11 (Vol. 11.07) : 2011	9.20
4.	Concentration of NO_2	$\mu g/m^3$	IS 5182 (Part 6) 2006 & ASTM D 1607-91 reapproved 2005 : Sec. 11 (Vol. 11.07) : 2011	32.50
5.	Concentration of CO	mg/m^3	IS 5182 (Part 10): 1999 reaffirmed 2005 & ASTM D 3162-94 reapproved 2005 : Sec. 11 (Vol. 11.07) : 2011	0.32
6.	Concentration of Pb	$\mu g/m^3$	IS 5182 (Part 22) 2004	<0.01
7.	Benzo (a) Pyrene (BaP)	ng/m^3	IS 5182 (Part 12) : 2004 & ASTM D 6209-98 reapproved 2004 : Sec. 11 (Vol. 11.07) : 2011	<0.36
8.	Benzene (C_6H_6)	$\mu g/m^3$	IS 5182 (Part 11) 2006 & ASTM D 5466-01 reapproved 2007 : Sec. 11 (Vol. 11.07) : 2011	<0.74
9.	Ozone (O_3)	$\mu g/m^3$	IS 5182 (Part-IX) : 1974	<10.0
10.	Ammonia (NH_3)	$\mu g/m^3$	NIOSH Manual of Analytical Method, 4th Edition 1994, Method 6015, issue 2	<4.18
11.	Nickel (Ni)	ng/m^3	EPA IO 3.2, 1999	<0.02
12.	Arsenic (As)	ng/m^3	EPA IO 3.2, 1999, APHA 23rd Ed 3114C : 2017	<0.01

Remarks :

Reviewed By :

(DurbadalChakraborty)
(Dy. Quality Manager)

Approved By :

(Dr. Ajoy Paul)
(Quality Manger)

TEST REPORT

FORMAT NO : ENV/FM/37

Name of the Industry	:	Bravo Sponge Iron Pvt. Ltd.		Type of Industry	:	Steel & Power Unit	
Address	:	Vill. – Mohuda. P.O. – Rukni, P.S. – Para, Purulia – 723145		Sampling Date	:	20.02.2020 – 21.02.2020	
				Period of Analysis	:	24.02.2020 – 25.02.2020	
				Date of Issue	:	26.02.2020	
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No	Type of Sample	: Ambient Air
Sample ID No.	:	606A/EC/M/A/V	Report No.	:	606A/EC/M/TR(A)/V/19-20		

A] GENERAL INFORMATION

1.	Location of Sampling	:	Mohuda Village (0.5 K.M. from Plant) (Southern Side)
2.	Duration of Sampling	:	24 hrs. (10:10 a.m. – 10:10 a.m.)

B] METEOROLOGICAL INFORMATION

1.	Average Temperature (^{0}C)	:	26.50
2.	Average Relative Humidity (%)	:	72.50
3.	Barometric Pressure (mm of Hg)	:	756.0
4.	Smell or Odour	:	No Remarkable Smell
5.	Weather Condition	:	Clear sky

C] RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Concentration of $PM_{2.5}$	µg/m^3	USEPA 1997a, 40 CFR Part 50, Appendix L : 2006	46.10
2.	Concentration of PM_{10}	µg/m^3	IS 5182 (PART 23) : 2006	78.20
3.	Concentration of SO_2	µg/m^3	IS 5182 (Part 2) 2001 & ASTM D 2914-01 reapproved 2007: Sec. 11 (Vol. 11.07) : 2011	7.80
4.	Concentration of NO_2	µg/m^3	IS 5182 (Part 6) 2006 & ASTM D 1607-91 reapproved 2005 : Sec. 11 (Vol. 11.07) : 2011	25.0

Remarks :

Reviewed By :

(DurbadalChakraborty)
(Dy. Quality Manager)

Approved By :

(Dr. Ajoy Paul)
(Quality Manger)

TEST REPORT

FORMAT NO : ENV/FM/37

Name of the Industry	:	Bravo Sponge Iron Pvt. Ltd.	Type of Industry	:	Steel & Power Unit
Address	:	Vill. – Mohuda. P.O. – Rukni, P.S. – Para, Purulia – 723145	Sampling Date	:	20.02.2020 – 21.02.2020
			Period of Analysis	:	24.02.2020 – 25.02.2020
			Date of Issue	:	26.02.2020

Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No	Type of Sample	:	Ambient Air

Sample ID No.	:	606A/EC/M/A/VI	Report No.	:	606A/EC/M/TR(A)/VI/19-20

A] GENERAL INFORMATION

1.	Location of Sampling	:	Near Railway Siding Area (Northern Side)
2.	Duration of Sampling	:	24 hrs. (10:30 a.m. – 10:30 a.m.)

B] METEOROLOGICAL INFORMATION

1.	Average Temperature (^{0}C)	:	26.50
2.	Average Relative Humidity (%)	:	72.50
3.	Barometric Pressure (mm of Hg)	:	756.0
4.	Smell or Odour	:	No Remarkable Smell
5.	Weather Condition	:	Clear sky

C] RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Concentration of $PM_{2.5}$	µg/m^3	USEPA 1997a, 40 CFR Part 50, Appendix L : 2006	50.10
2.	Concentration of PM_{10}	µg/m^3	IS 5182 (PART 23) : 2006	84.25
3.	Concentration of SO_2	µg/m^3	IS 5182 (Part 2) 2001 & ASTM D 2914-01 reapproved 2007: Sec. 11 (Vol. 11.07) : 2011	7.85
4.	Concentration of NO_2	µg/m^3	IS 5182 (Part 6) 2006 & ASTM D 1607-91 reapproved 2005 : Sec. 11 (Vol. 11.07) : 2011	28.50

Remarks :

Reviewed By :

(DurbadalChakraborty)
(Dy. Quality Manager)

Approved By :

(Dr. Ajoy Paul)
(Quality Manger)

TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	:	Bravo Sponge Iron Pvt. Ltd.	Type of Industry	:	Steel & Power Unit
Address	:	Vill. – Mohuda. P.O. – Rukni, P.S. – Para, Purulia – 723145	Sampling Date	:	20.02.2020
			Period of Analysis	:	24.02.2020 – 25.02.2020
			Date of Issue	:	26.02.2020

Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No	Type of Sample	:	Source Emission

Sample ID No.	:	606A/EC/M/A/I	Report No.	:	606A/EC/M/TR(A)/I/19-20

A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	:	Rotary Kiln No. 1 & 2			
Shape of Stack	:	Circular	Height of Stack (mtr.) (from G. L.)	:	30.0
Materials of Construction	:	M.S.	Stack I.D. at sampling point (mtr.)	:	1.90
Capacity	:	Kiln No.1 – 100 TPD & Kiln No.2 – 95 TPD	Height of sampling port (mtr.) (from G.L.)	:	14.0
Emission Due to	:	Oxidation of Coal & Reduction of Fe-Ore			
Fuel Used	:	Coal	Permanent Platform & Ladder	:	Yes
Working Fuel Consumption	:	Rated – 5.63 MT/hr. (each kiln) Working – 5.12 MT/hr. (each Kiln)			
Pollution Control Device	:	E.S.P with W.H.R.B			

B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.		RESULTS
1.	Flue Gas Temperature	^0C	IS 11255 (Part 1)	:	124.6
2.	Barometric Pressure	mm of Hg.	--	:	756.0
3.	Velocity of Gas flow	m/s	IS 11255 (Part 3)	:	12.2
4.	Quantity of Gas flow	$Nm^3/hr.$	IS 11255 (Part III)	:	89300.9
5.	Concentration of SO_2	mg/Nm^3	IS 11255 (Part 2) 1985 RA 2003	:	710.50
6.	Concentration of CO_2	% (v/v)	IS 13270 1992 RA 2003	:	10.6
7.	Concentration of CO	%(v/v)	IS 13270 1992 RA 2003	:	<1.0
8.	a) Concentration of Particulate Matter (at 10.6% CO_2)	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	:	26,45
	b) Concentration of Particulate Matter (at 12% CO_2)			:	30.10

Remarks :

Reviewed By :

(DurbadalChakraborty)
(Dy. Quality Manager)

Approved By :

(Dr. Ajoy Paul)
(Quality Manger)

TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	:	Bravo Sponge Iron Pvt. Ltd.		Type of Industry	:	Steel & Power Unit	
Address	:	Vill. – Mohuda. P.O. – Rukni, P.S. – Para, Purulia – 723145		Sampling Date	:	20.02.2020	
				Period of Analysis	:	24.02.2020 – 25.02.2020	
				Date of Issue	:	26.02.2020	
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No	Type of Sample	: Source Emission
Sample ID No.	:	606A/EC/M/A/II	Report No.	:	606A/EC/M/TR(A)/II/19-20		

A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	:	Rotary Kiln No. 3 & 4			
Shape of Stack	:	Circular	Height of Stack (mtr.) (from G. L.)	:	30.0
Materials of Construction	:	M.S.	Stack I.D. at sampling point (mtr.)	:	1.80
Capacity	:	100 TPD (each)	Height of sampling port (mtr.) (from G.L.)	:	15.0
Emission Due to	:	Oxidation of Coal & Reduction of Fe-Ore			
Fuel Used	:	Coal	Permanent Platform & Ladder	:	Yes
Working Fuel Consumption	:	Rated – 5.63 MT/hr. (each kiln) Working – 5.12 MT/hr. (each Kiln)			
Pollution Control Device	:	E.S.P with W.H.R.B			

B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.		RESULTS
1.	Flue Gas Temperature	^0C	IS 11255 (Part 1)	:	129.0
2.	Barometric Pressure	mm of Hg.	--	:	756.0
3.	Velocity of Gas flow	m/s	IS 11255 (Part 3)	:	11.4
4.	Quantity of Gas flow	$Nm^3/hr.$	IS 11255 (Part III)	:	69146.80
5.	Concentration of SO_2	mg/Nm^3	IS 11255 (Part 2) 1985 RA 2003	:	740.50
6.	Concentration of CO_2	% (v/v)	IS 13270 1992 RA 2003	:	10.6
7.	Concentration of CO	%(v/v)	IS 13270 1992 RA 2003	:	<1.0
8.	a) Concentration of Particulate Matter (at 10.6% CO_2)	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	:	35.10
	b) Concentration of Particulate Matter (at 12% CO_2)			:	39.73

Remarks :

Reviewed By :

(DurbadalChakraborty)
(Dy. Quality Manager)

Approved By :

(Dr. Ajoy Paul)
(Quality Manger)

Analysis Reports of Gaseous Emission

Identification Code: 2 0 1 1 2 0 1 9 6 9 4 0

WEST BENGAL POLLUTION CONTROL BOARD

Durgapur Regional Laboratory, Paribesh Bhawan, City Centre, Durgapur- 713 216

Analysis done at:

1.Name of Industry		M/s. Bravo sponge Iron Pvt. Ltd.	
2.Address		Vill.: Mahuda, P.O Rukni, P.S Para, Dist.: Purulia, Pin-723145	
3.Category & Type		Red, Integrated Steel plant	
4.Sampling Date		20.11.2019	
5.Duration of Sampling		22 min	
6.Name of Laboratory		M/s. Envirocheck	
7.Height of Stack from ground (m)		45.00	
8.Cross section of Stack at sampling point (m^2)		3.80	
9.Stack connected to		AFBC Boiler	
10.Emission due to (Furnace / Boiler)		Combustion of Coal & Dolo-char	
11.Average operational hours of boiler/furnace (per month)		720 hrs.	
12.APC System (if any)		ESP	
13.Working load of source (MT/hr)		19.50 TPH of Steam	
14. Fuel used		Coal & Dolo-char	
15.Rated Fuel consumption (Kg or l /hr)		-	
16.Working Fuel consumption (Kg or l /hr)		Coal 2.0 TPH, Dolo-char 6.3 TPH	
17.Nature of furnace/boiler		AFBC Boiler	
18.Flue Gas Temp (^0C)		121.2	
19.Flue gas velocity (m/s)	7.25	20.Volume of Flue gas drawn in lit (m^3)	1.012
21.Corrected flue gas volume (Nm^3)	0.9584	22.Percentage of O_2	4.8
23.To be compensated at (%, if required)		6.0	
24.Initial wt of thimble (gm)	1.5852	25.Final wt of thimble (gm)	1.6172
26.Wt. of PM (mg)	32.00	27.Particulate matter (mg/Nm^3)	41.72
28.Barometric Pressure Head (mm of Hg)	757	29.Diameter of the nozzle	12.7 mm
30. Others	SO_2 & NOx	31. Thimble Number	2323
32. Sampled by		Mr. Rahul Chakraborty	

27.11.19
Date of Reporting

Junior Scientist, DRL

Scientist, DRL

Copy to:
1. Chief Engineer - Planning / Chief Engineer - Operation & Execution
2. Env. Engineer (DRO) / Sr. Env. Engineer (ARO)
3 Industry

TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	:	Bravo Sponge Iron Pvt. Ltd.	Type of Industry	:	Steel & Power Unit
Address	:	Vill. – Mohuda. P.O. – Rukni, P.S. – Para, Purulia – 723145	Sampling Date	:	20.02.2020
			Period of Analysis	:	24.02.2020 – 25.02.2020
			Date of Issue	:	26.02.2020

Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No	Type of Sample	:	Source Emission

Sample ID No.	:	606A/EC/M/A/III	Report No.	:	606A/EC/M/TR(A)/III/19-20

A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	:	2 Nos. x 15 Ton Induction Furnace attached to common stack			
Shape of Stack	:	Circular	Height of Stack (mtr.) (from G. L.)	:	30.0
Materials of Construction	:	M.S.	Stack I.D. at sampling point (mtr.)	:	0.65
Capacity	:	2 x 15 Ton/Batch	Height of sampling port (mtr.) (from G.L.)	:	--
Emission Due to	:	Melting of Sponge Iron, Pig Iron & Scraps			
Fuel Used	:	Electrically Operated	Permanent Platform & Ladder	:	Yes
Working Fuel Consumption	:	Nil			
Pollution Control Device	:	Bag Filter			

B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.		RESULTS
1.	Flue Gas Temperature	^0C	IS 11255 (Part 1)	:	68.0
2.	Barometric Pressure	mm of Hg.	--	:	756.0
3.	Velocity of Gas flow	m/s	IS 11255 (Part 3)	:	9.08
4.	Quantity of Gas flow	$Nm^3/hr.$	IS 11255 (Part III)	:	9755.20
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	:	36.80

Remarks :

Reviewed By :

(DurbadalChakraborty)
(Dy. Quality Manager)

Approved By :

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(Quality Manger)