

Date: 13<sup>th</sup>, October 2021

Ref.: SIPL/ES/2020-21

## The Sr. Environmental Engineer

West Bengal Pollution Control Board  
Asansol Regional Office  
ADDA Commercial Market (2<sup>nd</sup> Floor),  
Oppo. Asansol Fire Station,  
GT Road, Asansol-713301  
Dist-Paschim Burdwan (WB)

**Sub: Environment Statement (FY: 2020-21) of M/s Shakambhari Ispat & Power Limited, Vill-Madandih,  
PO-Bartoria, Dist-Purulia (WB)-713221**

Dear Sir,

With reference to above subject we are submitting the Environment Statement (Form-V) for financial year ending the 31<sup>st</sup> March, 2021 of M/s Shakambhari Ispat & Power Limited, Vill-Madandih, PO-Bartoria, Dist-Purulia (WB), for your kind consideration please.

Kindly acknowledge our submission

Thanking you,

Yours faithfully,

for Shakambhari Ispat & Power Limited

  
(Authorized Signatory)

Encl: As above.



Copy to: The IGF & Incharge, GOI, MoEF&CC, Integrated Regional Office, Kolkata, IB-198, Salt Lake City,  
Sector-III, Kolkata- 700106

**FORM – V**  
**ENVIRONMENTAL STATEMENT**  
(See rule 14)

**Environmental Statement for the financial year 2020-2021 ending with 31<sup>st</sup> March**

**PART-A**

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

**Mr. Deepak Kumar Agarwal**  
**M/s Shakambhari Ispat & Power Limited**  
**Vill. – Madandih, P.O. – Bartoria,**  
**P.S. – Neturia, District – Purulia (WB),**  
**PIN – 723121**

ii. Industry category Primary – Large Secondary – Red

iii. Production category – Iron & Steel

iv. Year of establishment – 2002-03 (Our Group has acquired this establishment in Oct- 2010)

v. Date of the last environmental statement submitted – 28th October 2020

**PART – B**

Water and Raw Material Consumption:

i. Water consumption in m<sup>3</sup>/day

Process: 515 m<sup>3</sup>/day  
Cooling: 2323 m<sup>3</sup>/day  
Domestic: 30 m<sup>3</sup>/day

Name of Products	Process water consumption (m <sup>3</sup> ) per unit of products	
	During the current Financial Year (2019-20)	During the current Financial Year (2020-21)
Sponge Iron	0.63 m <sup>3</sup> /T	0.60 m <sup>3</sup> /T
Billet	0.68 m <sup>3</sup> /T	0.57 m <sup>3</sup> /T
TMT Bar + Wire Rod	0.35 m <sup>3</sup> /T	0.37 m <sup>3</sup> /T
Ferro Alloys	N/A	1.14 m <sup>3</sup> /T
Electricity	0.56 m <sup>3</sup> /MWh	0.63 m <sup>3</sup> /MWh

*(Handwritten signature)*



*(Handwritten date)*  
13/10/2021



ii. Raw material consumption

Name of raw materials*	Name of Products	Consumption of raw material per unit of output (Kg/T)	
		During the current Financial Year (2019-20)	During the current Financial Year (2020-21)
<b>DRI Division</b>			
Iron Ore	Sponge Iron	1044.44	909.88
Iron Ore Pellet		614.23	721.17
Coal		906.45	1114.11
Dolomite		61.20	73.46
<b>SMS Division</b>			
Pig Iron	MS Billet	196.26	176.46
Sponge Iron		821.88	853.05
Scrap		213.21	187.42
Silico Manganese		13.12	-
<b>Rolling Mill Division</b>			
MS Billet	TMT Bar & Wire Rod	1086.12	1233.61
<b>Ferro Division</b>			
Manganese Ore	Fe-Mn,	-	2997.90
Coal	Fe-Mn	-	932.75
Coke	Slag,	-	120.06
Dolomite	Si-Mn	-	184.60
Quartz		-	108.64
Fe-Manganese Slag		-	333.93
<b>CPP Division</b>			
Coal Fines	Electricity	63.33	172.02
Dolochar		564.45	430.11

\* 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 water collection pit through Plant Drain Network and reused for green belt development, bed ash cooling, ash conditioning and dust suppression purpose.				



(b) Ambient Air Quality

Pollutants	Quantity of Pollutants discharged (mass/day)	Concentration of Pollutants discharged ( $\mu\text{g}/\text{m}^3$ )				Percentage of variation from prescribed standards with reasons
		Near Security Gate (Southern Side)	Madandih Village	Near CPP Control Room (Western Side)	Near Lab Building (SMS Div.)	
PM <sub>2.5</sub>	Sampling time 24 hours	55.02	46.25	52.04	46.64	Within range
PM <sub>10</sub>		92.20	75.20	90.62	74.28	
SO <sub>2</sub>		8.10	5.76	7.89	6.18	
NO <sub>x</sub>		32.10	24.17	31.25	30.02	

Monitoring reports are attached (Annexure-1)

(c) Stack Monitoring Data

Pollutants	Location	Concentration of Pollutants discharged ( $\text{mg}/\text{Nm}^3$ )	Percentage of variation from prescribed standards with reasons
PM	DRI Kiln 100 (1&2) 100TPD Stack	28.49	Within the range
	DRI Kiln (3) 100TPD Stack	48.40	
	AFBC Boiler Stack (1X36TPH)- Running 34TPH	25.71	
	Induction Furnace Stack	16.50	
	DRI Kiln (2x350 TPD) Stack	47.51	
	CFBC Boiler (100TPH) stack	16.64	
	SEAF Stack (No. 1)	20.05	
	SEAF Stack (No. 2)	12.07	

Monitoring reports are attached (Annexure-2)

PART - D

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

Hazardous Wastes	Total Quantity (MT)	
	During the current financial year (2019-20)	During the current financial year (2020-2021)
From Process (Operation & Maint.)	NIL	1.025 Annual Return submitted Form-4 copy attached (Annex-3)
From Pollution Control Facilities	NIL	NIL



**PART – E**

Solid Wastes	Total Quantity (MT)	
	During the current Financial Year (2019-20)	During the current Financial Year (2020-21)
From Process	40844	69420
From Pollution Control Facilities	189009	212946
Quantity recycled or reutilized within the unit	115225	179756

**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	110871	Used in CPP for power generation
Fly Ash	155983	Sold to Brick Manufactures
Bottom Ash/Bed Material	43564	Used in land filling
BF flue Dust from DRI	11845	Used in After Burning Chamber to enhance power generation through WHRB and partially sold with fly ash after metal recovery.
BF flue dust from SMS	769	Used for land filling
IF Slag	56302	Used for Road Construction and Land filling
MS Scrap (SMS)	10003	Reused in SMS
MS Scrap & Mis roll (RMD)	49741	Reused in SMS
Mill Scale	3604	Reused in SMS and Ferro Division
Ferro Manganese Slag	5537	Reused for Silico Manganese production
Slico Manganese Slag	13118	It is being used for land filling & road constructions
BF dust (Ferro Div.)	785	Reused in process

**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), CER, etc.	70.00

  
12/10/2021



**PART – H**

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

**Already included in Part G.**

**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 reports as Annexure-1 & 2
- 2) Copy of Form-4 Annual Return as Annexure-3



*13/10/2024*

# Annexure-1



# ENVIROCHECK

Recognised by MoEF&CC, WBPCB & JSPCB  
Accredited by NABL (ISO/IEC 17025:2017)  
Certified by ISO 9001:2015, ISO 14001:2015 & ISO 45001 : 2018



## TEST REPORT

FORMAT NO : ENV/FM/37

Name of the Industry	: Shakambhari Ispat & Power Ltd.	Type of Industry	: Steel & Power Unit
Address	: Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia(WB)- 723121	Sampling Date	: 02.03.2021 – 03.03.2021
		Period of Analysis	: 06.03.2021 – 06.03.2021
		Date of Issue	: 08.03.2021
Sampling Plan & Procedure	: ENV/SOP/01	Deviation from the Sampling Method and Plan	: No
		Type of Sample	: Ambient Air
Sample ID No.	: ENV/05/March/A/IX	Report No.	: ENV/05/March/TR(A)/IX/20-21

### A] GENERAL INFORMATION

1. Location of Sampling : Near Security Gate (Southern Side)
2. Duration of Sampling : 24 hrs. (09:00 a.m. – 09:00 a.m.)

### B] METEOROLOGICAL INFORMATION

1. Average Temperature (°C) : 25.0
2. Average Relative Humidity (%) : 58.0
3. Barometric Pressure (mm of Hg) : 752.0
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 <sub>2.5</sub>	µg/m <sup>3</sup>	USEPA 1997a, 40 CFR Part 50, Appendix L : 2006	55.02
2.	Concentration of PM <sub>10</sub>	µg/m <sup>3</sup>	IS 5182 (PART 23) : 2006	92.20
3.	Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	IS 5182 (Part 2) 2001 & ASTM D 2914-01 reapproved 2007: Sec. 11 (Vol. 11.07) : 2011	8.10
4.	Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	IS 5182 (Part 6) 2006 & ASTM D 1607-91 reapproved 2005 : Sec. 11 (Vol. 11.07) : 2011	32.10
5.	Concentration of CO	mg/m <sup>3</sup>	IS 5182 (Part 10): 1999 reaffirmed 2005 & ASTM D 3162-94 reapproved 2005 : Sec. 11 (Vol. 11.07) : 2011	0.26
6.	Concentration of Pb	µg/m <sup>3</sup>	IS 5182 (Part 22) 2004	<0.01
7.	Benzo (a) Pyrene (BaP)	ng/m <sup>3</sup>	IS 5182 (Part 12) : 2004 & ASTM D 6209-98 reapproved 2004 : Sec. 11 (Vol. 11.07) : 2011	<0.36
8.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	IS 5182 (Part 11) 2006 & ASTM D 5466-01 reapproved 2007 : Sec. 11 (Vol. 11.07) : 2011	<0.74
9.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part-IX) : 1974	<10.0
10.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	NIOSH Manual of Analytical Method, 4 <sup>th</sup> Edition 1994, Method 6015, issue 2	<4.18
11.	Nickel (Ni)	ng/m <sup>3</sup>	EPA IO 3.2, 1999	<0.02
12.	Arsenic (As)	ng/m <sup>3</sup>	EPA IO 3.2, 1999, APHA 23 <sup>rd</sup> Ed 3114C : 2017	<0.01
13.	Mercury (Hg)	mg/m <sup>3</sup>	EPA IO.5 : 1999	0.024

Remarks :

Reviewed By :

(Durbadal Chakraborty, Dy. Quality Manager)

Approved By :

(Dr. S. B. Chowdhury, Technical Manager)





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## TEST REPORT

FORMAT NO : ENV/FM/37

Name of the Industry	: Shakambhari Ispat & Power Ltd.	Type of Industry	: Steel & Power Unit		
Address	: Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia(WB)– 723121	Sampling Date	: 02.03.2021 – 03.03.2021		
		Period of Analysis	: 06.03.2021 – 06.03.2021		
		Date of Issue	: 08.03.2021		
Sampling Plan & Procedure	: ENV/SOP/01	Deviation from the Sampling Method and Plan	: No	Type of Sample	: Ambient Air
Sample ID No.	: ENV/05/March/A/X	Report No.	: ENV/05/March/TR(A)/X/20-21		

### A] GENERAL INFORMATION

1. Location of Sampling : Madandih Village (0.5 K.M. from Plant) (Eastern Side)
2. Duration of Sampling : 24 hrs. (09:30 a.m. – 09:30 a.m.)

### B] METEOROLOGICAL INFORMATION

1. Average Temperature (°C) : 25.0
2. Average Relative Humidity (%) : 58.0
3. Barometric Pressure (mm of Hg) : 752.0
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 <sub>2.5</sub>	µg/m <sup>3</sup>	USEPA 1997a, 40 CFR Part 50, Appendix L : 2006	46.25
2.	Concentration of PM <sub>10</sub>	µg/m <sup>3</sup>	IS 5182 (PART 23) : 2006	75.20
3.	Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	IS 5182 (Part 2) 2001 & ASTM D 2914-01 reapproved 2007: Sec. 11 (Vol. 11.07) : 2011	5.76
4.	Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	IS 5182 (Part 6) 2006 & ASTM D 1607-91 reapproved 2005 : Sec. 11 (Vol. 11.07) : 2011	24.17

Remarks :

Reviewed By :

(Durbadal Chakraborty, Dy. Quality Manager)

Approved By :

(Dr. S. B. Chowdhury, Technical Manager)



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## TEST REPORT

FORMAT NO : ENV/FM/37

Name of the Industry	: Shakambhari Ispat & Power Ltd.	Type of Industry	: Steel & Power Unit		
Address	: Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia(WB)– 723121	Sampling Date	: 02.03.2021 – 03.03.2021		
		Period of Analysis	: 06.03.2021 – 06.03.2021		
		Date of Issue	: 08.03.2021		
Sampling Plan & Procedure	: ENV/SOP/01	Deviation from the Sampling Method and Plan	: No	Type of Sample	: Ambient Air
Sample ID No.	: ENV/05/March/A/XI	Report No.	: ENV/05/March/TR(A)/XI/20-21		

### A] GENERAL INFORMATION

1. Location of Sampling : Back Side of Captive Power Plant (Western Side)
2. Duration of Sampling : 24 hrs. (10:00 a.m. – 10:00 a.m.)

### B] METEOROLOGICAL INFORMATION

1. Average Temperature (°C) : 25.0
2. Average Relative Humidity (%) : 58.0
3. Barometric Pressure (mm of Hg) : 752.0
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 <sub>2.5</sub>	µg/m <sup>3</sup>	USEPA 1997a, 40 CFR Part 50, Appendix L : 2006	52.04
2.	Concentration of PM <sub>10</sub>	µg/m <sup>3</sup>	IS 5182 (PART 23) : 2006	90.62
3.	Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	IS 5182 (Part 2) 2001 & ASTM D 2914-01 reapproved 2007: Sec. 11 (Vol. 11.07) : 2011	7.89
4.	Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	IS 5182 (Part 6) 2006 & ASTM D 1607-91 reapproved 2005 : Sec. 11 (Vol. 11.07) : 2011	31.25

Remarks :

Reviewed By :

(Durbadal Chakraborty, Dy. Quality Manager)

Approved By :

(Dr. S. B. Chowdhury, Technical Manager)





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## TEST REPORT

FORMAT NO : ENV/FM/37

Name of the Industry	: Shakambhari Ispat & Power Ltd.	Type of Industry	: Steel & Power Unit		
Address	: Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia(WB)– 723121	Sampling Date	: 02.03.2021 – 03.03.2021		
		Period of Analysis	: 06.03.2021 – 06.03.2021		
		Date of Issue	: 08.03.2021		
Sampling Plan & Procedure	: ENV/SOP/01	Deviation from the Sampling Method and Plan	: No	Type of Sample	: Ambient Air
Sample ID No.	: ENV/05/March/A/XII	Report No.	: ENV/05/March/TR(A)/XII/20-21		

### A] GENERAL INFORMATION

1. Location of Sampling : Near Laboratory Building (SMS Division) (Northern Side)
2. Duration of Sampling : 24 hrs. (10:30 a.m. – 10:30 a.m.)

### B] METEOROLOGICAL INFORMATION

1. Average Temperature (°C) : 25.0
2. Average Relative Humidity (%) : 58.0
3. Barometric Pressure (mm of Hg) : 752.0
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 <sub>2.5</sub>	µg/m <sup>3</sup>	USEPA 1997a, 40 CFR Part 50, Appendix L : 2006	46.64
2.	Concentration of PM <sub>10</sub>	µg/m <sup>3</sup>	IS 5182 (PART 23) : 2006	74.28
3.	Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	IS 5182 (Part 2) 2001 & ASTM D 2914-01 reapproved 2007: Sec. 11 (Vol. 11.07) : 2011	6.18
4.	Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	IS 5182 (Part 6) 2006 & ASTM D 1607-91 reapproved 2005 : Sec. 11 (Vol. 11.07) : 2011	30.02

Remarks :

Reviewed By :

(Durbadal Chakraborty, Dy. Quality Manager)

Approved By :

(Dr. S. B. Chowdhury, Technical Manager)

# Annexure-2





# ENVIROCHECK

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## TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	: Shakambhari Ispat & Power Ltd.	Type of Industry	: Steel & Power Unit
Address	: Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia(WB)– 723121	Sampling Date	: 02.03.2021
		Period of Analysis	: 06.03.2021 – 06.03.2021
		Date of Issue	: 08.03.2021
Sampling Plan & Procedure	: ENV/SOP/01	Deviation from the Sampling Method and Plan	: No
Sample ID No.	: ENV/05/March/A/I	Report No.	: ENV/05/March/TR(A)/1/20-21

### A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	: Rotary Kiln No. 1 & 2 (100 TPD each) (attached to common Stack)
Shape of Stack	: Circular
Materials of Construction	: M.S.
Capacity	: 100 TPD (each)
Emission Due to	: Oxidation of Coal & Reduction of Fe-Ore
Fuel Used	: Coal
Working Fuel Consumption	: Rated – 5.63 MT/hr./Kiln Working – 5.12 MT/hr./Kiln
Pollution Control Device	: W.H.R.B with E.S.P

### B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Flue Gas Temperature	°C	IS 11255 (Part 1)	: 126.0
2.	Barometric Pressure	mm of Hg.	--	: 752.0
3.	Velocity of Gas flow	m/s	IS 11255 (Part 3)	: 11.84
4.	Quantity of Gas flow	Nm <sup>3</sup> /hr.	IS 11255 (Part III)	: 94251.39
5.	Concentration of SO <sub>2</sub>	mg/Nm <sup>3</sup>	IS 11255 (Part 2) 1985 RA 2003	: 607.64
6.	Concentration of CO <sub>2</sub>	% (v/v)	IS 13270 1992 RA 2003	: 10.4
7.	Concentration of CO	%(v/v)	IS 13270 1992 RA 2003	: <1.0
8.	a) Concentration of Particulate Matter (at 10.4% CO <sub>2</sub> )	mg/Nm <sup>3</sup>	IS 11255 (Part - 1) 1985 RA 2003 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec. 11 (Vol. 3 11.07) : 2011	: 24.69
	b) Concentration of Particulate Matter (at 12% CO <sub>2</sub> )			: 28.49

Remarks :

Reviewed By:

(Durbadal Chakraborty, Dy. Quality Manager)

Approved By:

(Dr. S. B. Chowdhury, Technical Manager)



# ENVIROCHECK

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Certified by ISO 9001:2015, ISO 14001:2015 & ISO 45001 : 2018



## TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	: Shakambhari Ispat & Power Ltd.	Type of Industry	: Steel & Power Unit
Address	: Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia(WB)- 723121	Sampling Date	: 02.03.2021
		Period of Analysis	: 06.03.2021 – 06.03.2021
		Date of Issue	: 08.03.2021
Sampling Plan & Procedure	: ENV/SOP/01	Deviation from the Sampling Method and Plan	: No
Sample ID No.	: ENV/05/March/A/II	Report No.	: ENV/05/March/TR(A)/II/20-21

### A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	: Rotary Kiln No. 3
Shape of Stack	: Circular
Materials of Construction	: M.S.
Capacity	: 100 TPD
Emission Due to	: Oxidation of Coal & Reduction of Fe-Ore
Fuel Used	: Coal
Working Fuel Consumption	: Rated – 5.63 MT/hr./Kiln Working – 5.12 MT/hr./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	°C	IS 11255 (Part 1)	: 130.0
2.	Barometric Pressure	mm of Hg.	--	: 752.0
3.	Velocity of Gas flow	m/s	IS 11255 (Part 3)	: 11.13
4.	Quantity of Gas flow	Nm <sup>3</sup> /hr.	IS 11255 (Part III)	: 87968.54
5.	Concentration of SO <sub>2</sub>	mg/Nm <sup>3</sup>	IS 11255 (Part 2) 1985 RA 2003	: 564.24
6.	Concentration of CO <sub>2</sub>	% (v/v)	IS 13270 1992 RA 2003	: 10.0
7.	Concentration of CO	%(v/v)	IS 13270 1992 RA 2003	: <1.0
8.	a) Concentration of Particulate Matter (at 10% CO <sub>2</sub> )	mg/Nm <sup>3</sup>	IS 11255 (Part – 1) 1985 RA 2003 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec. 11 (Vol. 3 11.07) : 2011	: 40.34
	b) Concentration of Particulate Matter (at 12% CO <sub>2</sub> )			: 48.40

Remarks :

Reviewed By :

(Durbadal Chakraborty, Dy. Quality Manager)

Approved By :

(Dr. S. B. Chowdhury, Technical Manager)





# ENVIROCHECK

Recognised by MoEF&CC, WBPCB & JSPCB  
 Accredited by NABL (ISO/IEC 17025:2017)  
 Certified by ISO 9001:2015, ISO 14001:2015 & ISO 45001 : 2018



## TEST REPORT

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Address	: Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia(WB)– 723121	Sampling Date	: 02.03.2021
		Period of Analysis	: 06.03.2021 – 06.03.2021
		Date of Issue	: 08.03.2021
Sampling Plan & Procedure	: ENV/SOP/01	Deviation from the Sampling Method and Plan	: No
Sample ID No.	: ENV/05/March/A/III	Report No.	: ENV/05/March/TR(A)/III/20-21

### A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	: AFBC Boiler
Shape of Stack	: Circular
Materials of Construction	: M.S.
Capacity	: 36 TPH (Running – 34 TPH)
Emission Due to	: Oxidation of Coal & Dolochar
Fuel Used	: Coal & Dolochar
Working Fuel Consumption	: Coal – 150 TPD Dolochar – 132 TPD
Pollution Control Device	: E.S.P

### B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Flue Gas Temperature	°C	IS 11255 (Part 1)	: 131.0
2.	Barometric Pressure	mm of Hg.	--	: 752.0
3.	Velocity of Gas flow	m/s	IS 11255 (Part 3)	: 8.93
4.	Quantity of Gas flow	Nm <sup>3</sup> /hr.	IS 11255 (Part III)	: 79651.27
5.	Concentration of SO <sub>2</sub> (at 6% O <sub>2</sub> )	mg/Nm <sup>3</sup>	IS 11255 (Part 2) 1985 RA 2003	: 494.76
6.	Concentration of NO <sub>x</sub> (at 6% O <sub>2</sub> )	mg/Nm <sup>3</sup>	IS : 11255 (Part 7) 2005 & ASTM D 1608-98 reapproved 2009 : Sec 11 (Vol. 11.07) : 2011	: 172.4
7.	Concentration of CO <sub>2</sub>	% (v/v)	IS 13270 1992 RA 2003	: 10.0
8.	Concentration of CO	%(v/v)	IS 13270 1992 RA 2003	: <1.0
9.	a) Concentration of Particulate Matter (at 10% CO <sub>2</sub> )	mg/Nm <sup>3</sup>	IS 11255 (Part – 1) 1985 RA 2003 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec. 11 (Vol. 3 11.07) : 2011	: 21.43
	b) Concentration of Particulate Matter (at 12% CO <sub>2</sub> )			: 25.71

Remarks :

Reviewed By :

(Durbadal Chakraborty, Dy. Quality Manager)

Approved By :

(Dr. S. B. Chowdhury, Technical Manager)



# ENVIROCHECK

Recognised by MoEF&CC, WBPCB & JSPCB  
Accredited by NABL (ISO/IEC 17025:2017)  
Certified by ISO 9001:2015, ISO 14001:2015 & ISO 45001 : 2018



## TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	: Shakambhari Ispat & Power Ltd.	Type of Industry	: Steel & Power Unit
Address	: Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia(WB)- 723121	Sampling Date	: 02.03.2021
		Period of Analysis	: 06.03.2021 – 06.03.2021
		Date of Issue	: 08.03.2021
Sampling Plan & Procedure	: ENV/SOP/01	Deviation from the Sampling Method and Plan	: No
Sample ID No.	: ENV/05/March/A/IV	Report No.	: ENV/05/March/TR(A)/IV/20-21

### A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	: Hood Over Induction Furnace (5 nos.) attached to common stack
Shape of Stack	: Circular
Materials of Construction	: M.S.
Capacity	: 25 Ton/Heat
Emission Due to	: Melting of Pig Iron, Sponge Iron and Scrap
Fuel Used	: Electrically Operated
Working Fuel Consumption	: Yes
Pollution Control Device	: Bag Filter

### B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Flue Gas Temperature	°C	IS 11255 (Part 1)	: 52.0
2.	Barometric Pressure	mm of Hg.	--	: 752.0
3.	Velocity of Gas flow	m/s	IS 11255 (Part 3)	: 9.64
4.	Quantity of Gas flow	Nm <sup>3</sup> /hr.	IS 11255 (Part III)	: 24689.84
5.	Concentration of Particulate Matter	mg/Nm <sup>3</sup>	IS 11255 (Part - 1) 1985 RA 2003 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec. 11 (Vol. 3 11.07) : 2011	: 16.50

Remarks : During monitoring 3 nos. furnace were in operation.

Reviewed By :

(Durbadal Chakraborty, Dy. Quality Manager)

Approved By :

(Dr. S. B. Chowdhury, Technical Manager)





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## TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	: Shakambhari Ispat & Power Ltd.	Type of Industry	: Steel & Power Unit
Address	: Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia(WB)- 723121	Sampling Date	: 02.03.2021
		Period of Analysis	: 06.03.2021 – 06.03.2021
		Date of Issue	: 08.03.2021
Sampling Plan & Procedure	: ENV/SOP/01	Deviation from the Sampling Method and Plan	: No
Sample ID No.	: ENV/05/March/A/V	Report No.	: ENV/05/March/TR(A)/V/20-21

### A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	: Rotary Kiln No. 1 & 2 (attached to common Stack)
Shape of Stack	: Circular
Materials of Construction	: Concrete
Capacity	: 350 TPD x 2
Emission Due to	: Oxidation of Coal & Reduction of Fe-Ore
Fuel Used	: Coal
Working Fuel Consumption	: 13.5 TPH/Kiln
Pollution Control Device	: W.H.R.B with E.S.P

### B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Flue Gas Temperature	°C	IS 11255 (Part 1)	: 164.0
2.	Barometric Pressure	mm of Hg.	--	: 753.0
3.	Velocity of Gas flow	m/s	IS 11255 (Part 3)	: 11.74
4.	Quantity of Gas flow	Nm <sup>3</sup> /hr.	IS 11255 (Part III)	: 147806.42
5.	Concentration of SO <sub>2</sub>	mg/Nm <sup>3</sup>	IS 11255 (Part 2) 1985 RA 2003	: 612.60
6.	Concentration of CO <sub>2</sub>	% (v/v)	IS 13270 1992 RA 2003	: 11.4
7.	Concentration of CO	%(v/v)	IS 13270 1992 RA 2003	: <1.0
8.	a) Concentration of Particulate Matter (at 11.4% CO <sub>2</sub> )	mg/Nm <sup>3</sup>	IS 11255 (Part - 1) 1985 RA 2003 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec. 11 (Vol. 3 11.07) : 2011	: 45.14
	b) Concentration of Particulate Matter (at 12% CO <sub>2</sub> )			: 47.51

Remarks : During monitoring both kilns were in operation

Reviewed By :

(Durbadal Chakraborty, Dy. Quality Manager)

Approved By :

(Dr. S. B. Chowdhury, Technical Manager)



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Certified by ISO 9001:2015, ISO 14001:2015 & ISO 45001 : 2018



## TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	: Shakambhari Ispat & Power Ltd.	Type of Industry	: Steel & Power Unit
Address	: Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia(WB)– 723121	Sampling Date	: 04.03.2021
		Period of Analysis	: 06.03.2021 – 06.03.2021
		Date of Issue	: 08.03.2021
Sampling Plan & Procedure	: ENV/SOP/01	Deviation from the Sampling Method and Plan	: No
Sample ID No.	: ENV/05/March/A/VI	Report No.	: ENV/05/March/TR(A)/VI/20-21

### A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	: CFBC Boiler
Shape of Stack	: Circular
Materials of Construction	: Concrete
Capacity	: 100 TPH
Emission Due to	: Combustion of Coal & Dolochar
Fuel Used	: Coal & Dolochar
Working Fuel Consumption	: Coal – 12.5MT/hr. Dolochar – 8.33 MT/hr.
Pollution Control Device	: E.S.P

### B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Flue Gas Temperature	°C	IS 11255 (Part 1)	: 174.0
2.	Barometric Pressure	mm of Hg.	--	: 753.0
3.	Velocity of Gas flow	m/s	IS 11255 (Part 3)	: 8.37
4.	Quantity of Gas flow	Nm <sup>3</sup> /hr.	IS 11255 (Part III)	: 103537.46
5.	Concentration of CO <sub>2</sub>	% (v/v)	IS 13270 1992 RA 2003	: 12.6
6.	Concentration of CO	%(v/v)	IS 13270 1992 RA 2003	: <1.0
7.	a) Concentration of Particulate Matter (at 12.6% CO <sub>2</sub> )	mg/Nm <sup>3</sup>	IS 11255 (Part - 1) 1985 RA 2003 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec. 11 (Vol. 3 11.07) : 2011	: 17.48
	b) Concentration of Particulate Matter (at 12% CO <sub>2</sub> )			: 16.64

Remarks :

Reviewed By :

(Durbadal Chakraborty, Dy. Quality Manager)

Approved By :

(Dr. S. B. Chowdhury, Technical Manager)



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## TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	: Shakambhari Ispat & Power Ltd.	Type of Industry	: Steel & Power Unit
Address	: Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia(WB)– 723121	Sampling Date	: 04.03.2021
		Period of Analysis	: 06.03.2021 – 06.03.2021
		Date of Issue	: 08.03.2021
Sampling Plan & Procedure	: ENV/SOP/01	Deviation from the Sampling Method and Plan	: No
Sample ID No.	: ENV/05/March/A/VII	Report No.	: ENV/05/March/TR(A)/VII/20-21

### A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	: SEAF (No.1)
Shape of Stack	: Circular
Materials of Construction	: M.S.
Capacity	: 9.0 MVA
Emission Due to	: Reduction of Si-Mn Ore
Fuel Used	: N.A. (Electrically Operated)
Working Fuel Consumption	: Nil
Pollution Control Device	: F. D. Cooler and Pulse Jet Bag Filter

### B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Flue Gas Temperature	°C	IS 11255 (Part 1)	: 54.0
2.	Barometric Pressure	mm of Hg.	--	: 753.0
3.	Velocity of Gas flow	m/s	IS 11255 (Part 3)	: 6.32
4.	Quantity of Gas flow	Nm <sup>3</sup> /hr.	IS 11255 (Part III)	: 52228.92
5.	Concentration of SO <sub>2</sub>	mg/Nm <sup>3</sup>	IS 11255 (Part 2) 1985 RA 2003	: 95.77
6.	Concentration of CO <sub>2</sub>	% (v/v)	IS 13270 1992 RA 2003	: 1.2
7.	Concentration of CO	%(v/v)	IS 13270 1992 RA 2003	: <1.0
8.	Concentration of Particulate Matter	mg/Nm <sup>3</sup>	IS 11255 (Part - 1) 1985 RA 2003 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec. 11 (Vol. 3 11.07) : 2011	: 20.05

Remarks :

Reviewed By :

(Durbadal Chakraborty, Dy. Quality Manager)

Approved By :

(Dr. S. B. Chowdhury, Technical Manager)





# ENVIROCHECK

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Accredited by NABL (ISO/IEC 17025:2017)  
Certified by ISO 9001:2015, ISO 14001:2015 & ISO 45001 : 2018



## TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	: Shakambhari Ispat & Power Ltd.	Type of Industry	: Steel & Power Unit
Address	: Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia(WB)- 723121	Sampling Date	: 04.03.2021
		Period of Analysis	: 06.03.2021 – 06.03.2021
		Date of Issue	: 08.03.2021
Sampling Plan & Procedure	: ENV/SOP/01	Deviation from the Sampling Method and Plan	: No
Sample ID No.	: ENV/05/March/A/VIII	Report No.	: ENV/05/March/TR(A)/VIII/20-21

### A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	: SEAF (No.2)
Shape of Stack	: Circular
Materials of Construction	: M.S.
Capacity	: 9.0 MVA
Emission Due to	: Reduction of Si-Mn Ore
Fuel Used	: N.A. (Electrically Operated)
Working Fuel Consumption	: Nil
Pollution Control Device	: F. D. Cooler and Pulse Jet Bag Filter

### B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Flue Gas Temperature	°C	IS 11255 (Part 1)	: 78.0
2.	Barometric Pressure	mm of Hg.	--	: 753.0
3.	Velocity of Gas flow	m/s	IS 11255 (Part 3)	: 8.46
4.	Quantity of Gas flow	Nm <sup>3</sup> /hr.	IS 11255 (Part III)	: 65120.6
5.	Concentration of SO <sub>2</sub>	mg/Nm <sup>3</sup>	IS 11255 (Part 2) 1985 RA 2003	: 85.60
6.	Concentration of CO <sub>2</sub>	% (v/v)	IS 13270 1992 RA 2003	: 1.0
7.	Concentration of CO	%(v/v)	IS 13270 1992 RA 2003	: <1.0
8.	Concentration of Particulate Matter	mg/Nm <sup>3</sup>	IS 11255 (Part - 1) 1985 RA 2003 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec. 11 (Vol. 3 11.07) : 2011	: 12.07

Remarks :

Reviewed By :

(Durbadal Chakraborty, Dy. Quality Manager)

Approved By :

(Dr. S. B. Chowdhury, Technical Manager)

# Annexure-3

**FORM 4**  
**[See rules 6(5), 13(8), 16(6) and 20 (2)]**  
**Annual Return**  
**under**  
**Hazardous & Other Wastes(Management & Transboundary Movement) Rules, 2016**  
**Transboundary Movement) Rules, 2016**

To be submitted to State Pollution Control Board by 30th day of June of every year for the preceding period April to March

**Return No :** 850708

**Period :** 2020-2021

<b>1. Name of facility/Industry Industry Address of facility/Industry</b>	SHAKAMBHARI ISPAT & POWER LTD. Vill-Madandih, PO-Bartoria, PS-Neturia, Dist-Purulia (WB)			
<b>2. UID</b>	WB0016102592			
<b>3. Authorisation No Date of issue: Date of Expiry</b>	47/2S(HW)-3632/2019 24/03/2021 31/10/2024			
<b>4. (i) Name of the authorised person &amp; Designation</b>	R. K. MISHRA DGM			
<b>(ii) Correspondence Address</b>	SHAKAMBHARI ISPAT & POWER LTD. Vill-Madandih, PO-Bartoria, PS-Neturia, Dist-Purulia-723121 (WB)			
<b>(iii) Mobile No</b>	8695621900			
<b>(iv) Land Line No (with area code)</b>	-			
<b>(iv) Fax number (with area code)</b>	-			
<b>(vi) e-mail</b>	rk.mishra@shakambhargroup.in			
<b>(vii) Type of HW Handler</b>	Generator			
<b>(viii) If involved in Interstate Movement of HW</b>	No			
<b>5. Production during the year (product wise), wherever applicable</b>	<b>Sr.no</b>	<b>Product Name</b>	<b>Quantity</b>	<b>Unit</b>
	1	Fe-Mn & Fe-Si	19632.13	Metric Ton
	2	TMT Bar & Wire Rod	233735.57	Metric Ton
	3	MS Billet	391686.65	Metric Ton
	4	Sponge Iron	340952.07	Metric Ton

**Part A. To be filled by hazardous waste generators**

Sr. no	Name of Process	Category	Waste Stream	Unit	Quantity in stock at the beginning of the year	Total quantity of waste generated	Quantity dispatched to disposal facility	Quantity dispatched to recycler or coprocessors or preprocessor	Quantity dispatched to others	Quantity utilised in house	Quantity in storage at the end of the year



1	Schedule I - 13. Production of iron and steel including other ferrous alloys (electric furnaces; steel rolling and finishing mills; Coke oven and by product plant)	Used Oil	5.1	Metric Ton	0.3 Metric Tonnes/Y ear	1.025 Metric Tonnes/Y ear	0 Metric Tonnes/Y ear	1.2 Metric Tonnes/Y ear	0 Metric Tonnes/Y ear	0 Metric Tonnes/Y ear	0.125 Metric Tonnes/Y ear
2	Schedule I - 13. Production of iron and steel including other ferrous alloys (electric furnaces; steel rolling and finishing mills; Coke oven and by product plant)	Used Cotton	5.2	Metric Ton	0 Metric Tonnes/Y ear	0.45 Metric Tonnes/Y ear	0 Metric Tonnes/Y ear	0 Metric Tonnes/Y ear	0 Metric Tonnes/Y ear	0.45 Metric Tonnes/Y ear	0 Metric Tonnes/Y ear
3	Schedule I - Other	Other	Scrap Lead Batteries	Metric Ton	0 Metric Tonnes/Y ear	0.74 Metric Tonnes/Y ear	0 Metric Tonnes/Y ear	0.74 Metric Tonnes/Y ear	0 Metric Tonnes/Y ear	0 Metric Tonnes/Y ear	0 Metric Tonnes/Y ear

**Part B. To be filled by Treatment, storage and disposal facility operators**

Sr. no	Name of Process	Category	Waste Stream	Unit	Quantity in stock at the beginning of the year	Total quantity received	Quantity treated	Quantity disposed in landfills as such and after treatment	Quantity incinerated (If applicable)	Quantity processed other than specified above	Quantity in storage at the end of the year
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**Part C. To be filled by recyclers or co-processors or other users**

Sr. no	Name of Process	Category	Waste Stream	Unit	Quantity in stock at the beginning of the year	Quantity of waste received during the year from Domestic sources	Quantity of waste received during the year Imported	Quantity recycled or co-processed or used	Quantity re-exported (wherever applicable)	Quantity in storage at the end of the year	
<b>Whether Importing Other Wastes</b>						<i>Not-Selected</i>					

**Part D. Details of Interstate Movement**

Sr.no	Name of Industry (Within State)	District	Receiving/S ending	Name of Industry (Other State)	State	Type of Waste	Qty.(MTA)	Purpose (Recycling/ Disposal/Incineration)
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**Part D. Details of Import of Other Waste Import & Recycling**

Sr.no	Name of the Importer)	Imported from (country name)	Type of Other waste	Quantity Imported (MTA)	Quantity Recycled (MTA)
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**Date :**02/08/2021

**Place :** *Purulia*

*DEEPAK KUMAR AGARWAL*

**Name of the Occupier or Operator of the  
disposal facility**