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To  
The Environmental Engineer and In-charge,  
West Bengal Pollution Control Board,  
Haldia Regional Office  
Raghunathchak, PO- Barghasipur, PS- Bhabanipur  
Dist- Purba Medinipur, Pin- 721657

TSL/HMC/ENV/FY 25/007  
September 25, 2025



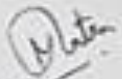
**Sub: Environmental Statement for the Year 2024-25 for 1.6 MTPA Metallurgical Coke Plant at Patikhali, Haldia of Tata Steel Limited, Hooghly Met coke Division.**

Dear Sir,

We are enclosing the "Environmental Statement" duly filled in Form V, for the year 2024-2025 for 1.6 MTPA Metallurgical Coke Plant at Patikhali, Haldia of Tata Steel Limited, Hooghly Met coke Division, For your kind consideration.

Yours faithfully,

**For Tata Steel Limited**

  
Mantu Patra  
General Manager  
Tata Steel Ltd., HMC Division, Haldia

Encl: a/a.

CC to : The Member Secretary, West Bengal pollution control Board, Paribesh Bhawan, 10A, Broadway Road, LA Block, Sector III, Bidhan Nagar, Kolkata, West Bengal-700106

**TATA STEEL LIMITED**

Hooghly Met Coke Division, Patikhali P.O. Haldia Oil Refinery, Purba Medinipur, Haldia 721606  
R.O. Bombay House, 24 Horni Mody Street Fort, Mumbai 400 001 India  
CN L27100MH1907PLC000260 TEL +91 7477795610 Email : gm.hmc@tatasteel.com

**ENVIRONMENTAL STATEMENT  
FOR THE YEAR 2024-25**

**For**

**Hooghly Metcoke Division  
Tata Steel Limited**



**Tata steel Ltd. Hooghly Metcoke Division  
Patikhali, Haldia  
Dist- Purba Medinipur, West Bengal -721606**

## ENVIRONMENTAL STATEMENT FORM-V

(See rule 14)

*Environmental Statement for the financial year 2024-25 ending with 31<sup>st</sup> March*

### PART-A

i)	Name and address of the owner/ occupier of the industry, operation, or process	:	Mantu Patra General Manager Tata Steel HMC Division Patikhali, Haldia, Dist- Purba Medinipur, West Bengal -721606
ii)	Industry Category Primary/ (STC code) Secondary (STC code)	:	Large Scale Industry —
iii)	Production Capacity	:	1.6 MTPA Metallurgical Coke
iv)	Year of Establishment	:	December, 2007
v)	Date of Last Environmental /Audit Report submitted	:	25.09.2024

### PART-B

#### WATER AND RAW MATERIAL CONSUMPTION

i)	<b>Water Consumption in m<sup>3</sup>/day -</b>	<b>1799 m<sup>3</sup>/day</b>
	Process	:
	Cooling	: 1784 m <sup>3</sup> /day} industrial
	Domestic	: 15 m <sup>3</sup> /day

Name of the products	Process water consumption per unit of products	
	During the Current Financial Year 2023-2024	During the Current Financial Year 2024-2025
Metallurgical Coke	0.298 cum/ton of Coke	0.413 /ton of Coke

#### ii) Raw material consumption:

Name of Raw Material	Name of the Products	Consumption of raw material per unit of output (MT/ TGC)	
		During the Current Financial Year 2023-2024	During the Current Financial Year 2024-2025
Coking Coal	Metallurgical Coke	1.337	1.338

### PART-C

**POLLUTION DISCHARGED TO ENVIRONMENT/ UNIT OF OUTPUT**  
**(PARAMETERS AS SPECIFIED IN THE CONSENT ISSUED)**

Pollutants	Quantity of pollutants discharged (mass/day)	Concentrations of pollutants in discharges (mass/volume)	Percentage of variation from prescribed standards with reasons*
	Kg/day	mg/Nm <sup>3</sup>	
a) Water	There is no discharge of effluent. ZED is maintained.		
b) Air			
1	Chimney 1AB		
PM	104.47	25.73	-48.54
SO <sub>2</sub>	1243.01	296.81	-62.90
NOx	633.75	155.76	-68.85
2	Chimney 1CD		
PM	98.84	24.95	-50.11
SO <sub>2</sub>	1178.34	288.28	-63.97
NOx	601.86	152.41	-69.52
3	Chimney 2AB		
PM	95.75	23.85	-52.30
SO <sub>2</sub>	1204.34	300.29	-62.46
NOx	653.09	164.13	-67.17
4	Chimney 2 CD		
PM	110.57	27.22	-45.57
SO <sub>2</sub>	1436.52	351.20	-56.10
NOx	801.32	196.88	-60.63
5	Chimney 3 AB		
PM	117.90	29.29	-41.42
SO <sub>2</sub>	1388.57	346.77	-56.65
NOx	696.34	173.29	-65.34
6	Chimney 3 CD		
PM	120.25	30.24	-39.51
SO <sub>2</sub>	1224.25	293.21	-63.35
NOx	644.59	161.52	-67.70
7	Chimney 4 AB		
PM	152.32	37.67	-24.66
SO <sub>2</sub>	1356.67	314.61	-60.67
NOx	699.21	171.28	-65.75
8	Chimney 4 CD		
PM	128.11	32.36	-35.29
SO <sub>2</sub>	1324.87	333.25	-58.34
NOx	768.31	194.65	-61.07

**PART-D**

**HAZARDOUS WASTES**

(AS SPECIFIED UNDER HAZARDOUS WASTES (MANAGEMENT,  
HANDLING AND TRANS BOUNDARY MOVEMENT RULES, 2016)

Hazardous Wastes	Total Quantity (Kg)			
	During the Current Financial Year 2023-2024		During the Current Financial Year 2024-2025	
1. From Process	Generation	Sold/Disposed off	Generation	Sold/Disposed off
Used or spent oil (Schedules-I Stream-5.1)	3.062 T	5.508 T	4.488 T	4.488 T
Empty barrels /containers/liners contaminated with hazardous chemicals/ wastes (Schedules-I Stream-33.1)	1.042T	0.99 T	0.421 T	0.86 T
Contaminated cotton rags or other cleaning materials (Schedules-I Stream-33.2)	0.736T	1.24T	0.684 T	0.9 T
Waste Ceramic Waste (Schedule II Class C)	133.148T	133.148T	75.51 T	75.51 T

**PART-E**

**SOLID WASTE**

Sl. No.	Solid waste	Total Quantity (Kg)	
		During the previous financial year 2023-24	During the current financial year 2024-25
a.	From process	1251000kg (Swamp Breeze)	1552000kg (Swamp Breeze)
b.	From Pollution Control facilities	-	-
c.	1)Quantity recycled/reutilised within the unit	-	-
	2) Sold	4699950kg (Swamp Breeze)	4607820kg (Swamp Breeze)
	3) Disposed	Nil	Nil

### **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.*

<b>Hazardous/ Solid Wastes</b>	<b>Characteristics</b>	<b>Method of disposal</b>
Cotton contaminated with Oil & Grease	<i>Analysis report attached as Annexure I</i>	Disposed through TSDF of West Bengal Waste Management Ltd. (of M/s Ramky), Purba Medinipur, Haldia, WB.
Waste Ceramic		

### **PART-G**

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

- To harvest roof water from buildings (like ADM building / Store / Laboratory / pump house etc.) during monsoon, a storm water pond of approximately 6500 cum capacity has been developed. The collected roof water is channelled through a common storm water drainage system in to this pond. The stored water is effectively utilized for coke quenching, gardening, road dust suppression and water sprinkling. For seamless usage, around 3km of pipelines and four pumps have been installed.
- Mechanised road sweeping machines have been introduced to ensure effective housekeeping and cleanliness of plant roads.
- Road dust suppression is further managed through water sprinkling by truck mounted water tanker.
- Vertical gardens have been established at the Central Wire house and Administrative building, enhancing greenery and aesthetics.
- A biodiversity assessment has been conducted in both the core & buffer zone around HMC division to monitor and preserve ecological balance.

## **PART-H**

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

- The greenery development programme will be continued and further expanded in the year 2025.
- Key Pollution abatement measures include
  - ✚ Minimization of material spillage and maximise recovery/ reuse of collected spillage.
  - ✚ Reduction of burning loss through optimization of carbonisation process.
  - ✚ Arresting all kind of leakages in the oven to obtain maximum flue gas temperature etc.

## **PART-I**

### **MISCELLANEOUS:**

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

- Renewal of ISO 14001:2015, ISO 45001: 2018 and ISO 9001:2018 certifications was successfully completed in Jun'2025 and certification is valid for 3 years
- World Environment Day (5<sup>th</sup> June 2025) was celebrated across the plant premises with active participation of employees, reinforcing awareness and commitment towards sustainability.
- Regular Environmental Monitoring is carried out to ensure compliance and improvement in environmental performance.

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Sustainability



ISO 9001, 45001, 14001

**WEST BENGAL WASTE MANAGEMENT LTD.**

(A Division of Re Sustainability Limited)

J.L. No. : 103, Mouza : Purba Srikrishnapur, P.S.: Sutahata, Haldia-721635

Dist. : Purba Midnapore, State : West Bengal, T : 03224-278238/39, Fax : 278240

E-mail : laboratorywbwml@resustainability.com

CIN : U90002WB2004PLC098219

**LABORATORY  
TEST REPORT**

Name and Address of the Client	:	M/s Tata Steel Ltd. (Hooghly Metcoke Division) Patikhali, P.O Haldia Oil Refinery, Haldia Purba Medinipore- 721606
Sample / Product description	:	Hazardous Waste.
Sample Description	:	Cotton contaminated with oil & Grease.
Sample Collected by	:	WBWML Laboratory.
Sample quantity	:	500 gm.
Sampling Date and Method	:	9 <sup>th</sup> May'2023, Grab (WBWML/SOP/LAB/101)
Sample Received date	:	11 <sup>th</sup> May'2023
Sample Registration No. and Date	:	WBWML/CA/23-110, 15 <sup>th</sup> May'2023
Sample Receipt Condition	:	Sample recd. in plastic pouch.
Analysis Starting Date	:	15 <sup>th</sup> May'2023
Analysis Completion & Report Date	:	22 <sup>th</sup> May'2023
Date of report validity	:	21 <sup>st</sup> May'2025
Sub-contracting of Analysis	:	None

**TEST RESULT.**

Sl. no.	Parameter	Unit	Method	Observation / Result	Std. for Secure Landfill Disposal / Limits as per schedule II of HWM Rules 2016.
1	Physical State	–	Visual observation	Dry solid	–
2	Color	–	Visual observation	Black	–
3	Texture	–	Visual observation	Pieces	–
4	Reactive Cyanide	mg/kg	SW-846 : Ch. 7 (7.3.3), 9014	< 1.00	–
5	Reactive Sulfide	mg/kg	SW-846 : Ch. 7 (7.3.4), 9034	< 5.00	–
6	Cyanide – Total	mg/kg	SW-846 : 9010B, 9014	< 1.00	–
7	Cyanide – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 4500-CN <sup>-</sup> C SW-846 : 9014	< 0.05	< 2.0
8	Fluoride – Total	mg/kg	Std. Methods : 4500-F <sup>-</sup> B, D	< 1.00	–
9	Fluoride – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 4500F <sup>-</sup> B, D	< 1.00	< 50.0
10	Nitrate – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 4500-NO <sub>3</sub> <sup>-</sup> E	< 0.10	< 30.0
11	Ammonia – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 4500-NH <sub>3</sub> B, C	< 5.00	< 1000.0
12	Arsenic – Total	mg/kg	SW-846 : 3050B Std. Methods: 3500-As B : 2017	< 1.00	–
13	Arsenic – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods: 3500-As B : 2017	< 0.10	< 1.0
14	Phenol – WLT	mg/L	DIN : 38414 Part 4 (S4) SW-846 : 9065	< 1.00	< 100.0
15	Mercury – Total	mg/kg	SW-846 : 7471A Std. Methods : 3112 B : 2017	NA	–
16	Mercury – WLT	mg/L	DIN : 38414 Part 4 (S4) SW-846 : 7470A Std. Methods : 3112 B : 2017	NA	< 0.10

Regd. Office : Jindal Towers, Block 'A', 4th Floor, 21/1A/3, Darga Road, Kolkata-700017

Tel.: 9679999112 Fax: (91) 033 2289 2529, E-mail : wbwml@resustainability.com





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TC-7471

## WEST BENGAL WASTE MANAGEMENT LTD.

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 E-mail : laboratorywbwml@resustainability.com  
 CIN : U90002WB2004PLC098219

## LABORATORY

(Recognized by WBPCB)



ISO 9001, 45001, 14001

ULR – TC747123000000181P

## TEST REPORT

Name and Address of the Client : M/s Tata Steel Ltd. (Hooghly Metcoke Division)  
 Patikhali, P.O Haldia Oil Refinery, Haldia Purba Medinipore- 721606

Sample / Product description : Hazardous Waste.

Sample Description : Cotton contaminated with oil & Grease..

Sample Collected by : WBWML Laboratory.

Sample quantity : 500 gm.

Sampling Date and Method : 9<sup>th</sup> May'2023, Grab (WBWML/SOP/LAB/101)

Sample Received date : 11<sup>th</sup> May'2023

Sample Registration No. and Date : WBWML/CA/23-110, 15<sup>th</sup> May'2023

Sample Receipt Condition : Sample recd. in plastic pouch.

Analysis Starting Date : 15<sup>th</sup> May'2023

Analysis Completion & Report Date : 22<sup>th</sup> May'2023

Date of report validity : 21<sup>th</sup> May'2025

Sub-contracting of Analysis : None

## TEST RESULT

Sl. no.	Parameter	Unit	Method	Observation / Result	Std. for Secure Landfill Disposal / Limits as per schedule II of HWM Rules 2016.
1	Bulk Density	gm/cc	ASTM Std. : D 5057 – 10	0.48	–
2	Paint Filter Liquid Test	–	SW-846 : 9095 A	NA	Pass
3	pH (at 25.0°C)	–	USEPA 1998, SW-846 : 9045C	7.08	4.0-12.0
4	Calorific Value	kcal/kg	IS : 1350 (Part II) – 1975 (RA 2010)	7670	< 2500.0
5	Flash Point	°C	USEPA 1998, SW-846 : 1020A	> 60	> 60.0
6	Loss on Drying at 103-105 °C	% (w/w)	Std. Methods : 2540 G : 2017	2.67	–
7	Loss on Ignition at 550 °C (Dry Basis)	% (w/w)	Std. Methods : 2540 G : 2017	99.85	< 20.0 (non biodegradables) < 5.0 (biodegradables)
8	Water Soluble Organics	% (w/w)	DIN : 38414 Part 4 (S4) Std. Methods : 2540 E : 2017	2.65	< 10.0
9	Oil and Grease (As n-Hexane Extractable)	% (w/w)	USEPA 1998, SW-846 : 9071A	3.21	< 4.0
10	Cadmium – Total	mg/kg	USEPA 1998, SW-846 : 7000 B	< 1.00	–
11	Cadmium – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B : 2017	< 0.02	< 0.20
12	Cadmium – TCLP	mg/L	USEPA 1998, SW-846 : 1311 Std. Methods : 3111 B : 2017	< 0.02	< 1.00
13	Chromium – Total	mg/kg	USEPA 1998, SW-846 : 7000 B	35.83	–
14	Chromium – TCLP	mg/L	USEPA 1998, SW-846 : 1311 Std. Methods : 3111 B : 2017	< 0.20	< 5.0

Discipline: Chemical  
Group: Pollution & Environment

Sl. no.	Parameter	Unit	Method	Observation / Result	Std. for Secure Landfill Disposal / Limits as per schedule II of HWM Rules 2016.
15	Chromium (VI) – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods: 3500-Cr B :2017	0.24	< 0.50
16	Copper – Total	mg/kg	USEPA 1998, SW-846 :7000 B	46.15	–
17	Copper – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B :2017	< 0.20	< 10.0
18	Lead – Total	mg/kg	USEPA 1998, SW-846 :7000 B	22.28	–
19	Lead – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B :2017	0.21	< 2.0
20	Lead – TCLP	mg/L	USEPA 1998, SW-846 : 1311 Std. Methods : 3111 B :2017	0.33	< 5.0
21	Nickel – Total	mg/kg	SW-846 : 3050B, 7000 B	< 1.00	–
22	Nickel – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B :2017	< 0.04	< 3.0
23	Zinc – Total	mg/kg	USEPA 1998, SW-846 :7000 B	113.36	–
24	Zinc – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B :2017	0.43	< 10.0
25	Manganese - Total	mg/kg	USEPA 1998, SW-846 :7000 B	< 1.00	–
26	Manganese - WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B :2017	< 0.20	< 10.0
27	Vanadium – Total	mg/kg	USEPA 1998, SW-846 :7000 B	NA	–
28	Vanadium – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B :2017	NA	< 0.20

**Note:**

Instruments used – pH meter, BCM, Flash point tester, Hot air oven, Muffle furnace, Water bath, Soxhlet apparatus, AAS.

CPCB – Central Pollution Control Board

WLT – Water Leaching Test

TCLP – Toxicity Characteristics Leaching Procedure

ASTM – American Society for Testing and Materials

IS – Indian Standard

SW 846 – Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, USEPA, May 1997

Std. Methods – Standard Methods for the Examination of Water & Wastewater, 23<sup>rd</sup> Edition, APHA/AWWA/WEF, 2017

DIN : 38414 Part 4 (S4) – German Standard Procedure for Water, Wastewater, and Sediment Testing-Group S (Sludge and Sediment); Determination of Leachability (S4), 1984

NA – Not Analyzed, ND – Not Detected

The comprehensive analysis report refers only to the 'as received' sample of waste

The relevance vis-à-vis applicability of the report solely relates to the category no. as per the latest Hazardous Waste Rules as or as would be assigned by the concerned statutory authority

The report cannot be produced in part or in full without the permission of West Bengal Waste Management Limited

--END OF THE TEST REPORT--

(Chemist – Lab.)  
Checked by

Tarun Kumar Middy  
(Lab. – Manager)  
Authorized Signatory

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J.L. No. : 103, Mouza : Purba Srikrishnapur, P.S.: Sutahata, Haldia-721635  
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E-mail : laboratorywbwml@resustainability.com  
CIN : U90002WB2004PLC098219

### LABORATORY



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ISO 9001, 45001, 14001

Date – 13<sup>th</sup> June'2023

To

M/s Tata Steel Ltd. (HMC Div.)

Patikhali, P.O.- Haldia Oil Refinery, Haldia, Purba Medinipur- 721606.

**Sub. – Hazardous waste disposal pathway.**

Sir / Madam

As per the comprehensive analysis done for hazardous waste characterization, the respective disposal pathways directed by Central Pollution Control Board 'Guidelines for proper functioning and upkeep of disposal sites – HAZWAMS/32/2005-2006', would be as follows–

**1) Waste ceramic blanket:**


Comprehensive analysis report CAR – RE/WBWML/CA/23-120, 13<sup>th</sup> June'2023

Disposal pathway – **Direct Landfill (Secured Engineer Landfill).**

Any variation(s) in hazardous waste characteristics, if observed upon receipt of the same for disposal will be informed to you and the disposal pathway may change accordingly.

Along with this letter we are enclosing customer feedback form for your valuable feedback on the quality of our Laboratory Services, it will help us to Improvement in our Quality Systems. Requesting you please fill it and send us along with your office seal.

Regards,

  
Tarun Kumar Middya  
(Manager – Lab.)  
Authorized Signatory



TEST REPORT NO: RE/WBWML/CA/23-120

Discipline: Chemical

Group: Pollution & Environment

WBWML/GF/LAB-310



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ISO 9001, 45001, 14001



TC-7471

ULR - TC747123000000227P

## WEST BENGAL WASTE MANAGEMENT LTD.

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E-mail : laboratorywbwml@resustainability.com  
CIN : U90002WB2004PLC098219

**LABORATORY**  
**(Recognized by WBPCB)**

### TEST REPORT

Name and Address of the Client : M/s Tata Steel Ltd. (HMC Div.)  
Patikhali, P.O.- Haldia Oil Refinery, Haldia, Purba Medinipur- 721606.

Sample / Product description : Hazardous Waste.

Sample Description : Waste ceramic blanket.

Sample Collected by : WBWML Laboratory.

Sample quantity : 500 gm.

Sampling Date and Method : 6<sup>th</sup> June'2023, Grab (WBWML/SOP/LAB/101)

Sample Received date : 6<sup>th</sup> June'2023

Sample Registration No. and Date : WBWML/CA/23-120, 6<sup>th</sup> June'2023

Sample Receipt Condition : Sample recd. in plastic pouch.

Analysis Starting Date : 6<sup>th</sup> June'2023

Analysis Completion & Report Date : 13<sup>th</sup> June'2023

Date of report validity : 12<sup>th</sup> June'2025

Sub-contracting of Analysis : None

### TEST RESULT

Sl. no.	Parameter	Unit	Method	Observation / Result	Std. for Secure Landfill Disposal / Limits as per schedule II of HWM Rules 2016.
1	Bulk Density	gm/cc	ASTM Std : D 5057 - 10	0.27	-
2	Paint Filter Liquid Test	-	SW-846 : 9095 A	NA	Pass
3	pH (at 25.0°C)	-	USEPA 1998, SW-846 : 9045C	7.70	4.0-12.0
4	Calorific Value	kcal/kg	IS : 1350 (Part II) - 1975 (RA 2010)	< 250	< 2500.0
5	Flash Point	°C	USEPA 1998, SW-846 : 1020A	> 60	> 60.0
6	Loss on Drying at 103-105 °C	% (w/w)	Std. Methods : 2540 G : 2017	0.34	-
7	Loss on Ignition at 550 °C (Dry Basis)	% (w/w)	Std. Methods : 2540 G : 2017	2.69	< 20.0 (non biodegradables) < 5.0 (biodegradables)
8	Water Soluble Organics	% (w/w)	DIN : 38414 Part 4 (S4) Std. Methods : 2540 E : 2017	0.44	< 10.0
9	Oil and Grease (As n-Hexane Extractable)	% (w/w)	USEPA 1998, SW-846 : 9071A	< 1.00	< 4.0
10	Cadmium - Total	mg/kg	USEPA 1998, SW-846 : 7000 B	2.39	-
11	Cadmium - WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B : 2017	< 0.02	< 0.20
12	Cadmium - TCLP	mg/L	USEPA 1998, SW-846 : 1311 Std. Methods : 3111 B : 2017	< 0.02	< 1.00
13	Chromium - Total	mg/kg	USEPA 1998, SW-846 : 7000 B	9.33	-
14	Chromium - TCLP	mg/L	USEPA 1998, SW-846 : 1311 Std. Methods : 3111 B : 2017	< 0.20	< 5.0

Discipline: Chemical

Group: Pollution &amp; Environment

Sl. no.	Parameter	Unit	Method	Observation / Result	Std. for Secure Landfill Disposal / Limits as per schedule II of HWM Rules 2016.
15	Chromium (VI) – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods: 3500-Cr B :2017	< 0.20	< 0.50
16	Copper – Total	mg/kg	USEPA 1998, SW-846 : 7000 B	7.59	–
17	Copper – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B :2017	< 0.20	< 10.0
18	Lead – Total	mg/kg	USEPA 1998, SW-846 : 7000 B	39.24	–
19	Lead – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B :2017	< 0.20	< 2.0
20	Lead – TCLP	mg/L	USEPA 1998, SW-846 : 1311 Std. Methods : 3111 B :2017	< 0.20	< 5.0
21	Nickel – Total	mg/kg	SW-846 : 3050B, 7000 B	< 1.00	–
22	Nickel – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B :2017	< 0.04	< 3.0
23	Zinc – Total	mg/kg	USEPA 1998, SW-846 : 7000 B	5.88	–
24	Zinc – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B :2017	0.01	< 10.0
25	Manganese - Total	mg/kg	USEPA 1998, SW-846 : 7000 B	< 1.00	–
26	Manganese - WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B :2017	< 0.20	< 10.0
27	Vanadium – Total	mg/kg	USEPA 1998, SW-846 : 7000 B	NA	–
28	Vanadium – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B :2017	NA	< 0.20

**Note:**

Instruments used – pH meter, BCM, Flash point tester, Hot air oven, Muffle furnace, Water bath, Soxhlet apparatus, AAS.

CPCB – Central Pollution Control Board

WLT – Water Leaching Test

TCLP – Toxicity Characteristics Leaching Procedure

ASTM – American Society for Testing and Materials

IS – Indian Standard

SW 846 – Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, USEPA, May 1997

Std. Methods – Standard Methods for the Examination of Water & Wastewater, 23<sup>rd</sup> Edition, APHA/AWWA/WEF, 2017

DIN : 38414 Part 4 (S4) – German Standard Procedure for Water, Wastewater, and Sediment Testing-Group S (Sludge and Sediment), Determination of Leachability (S4), 1984


NA – Not Analyzed. ND – Not Detected

The comprehensive analysis report refers only to the 'as received' sample of waste

The relevance vis-à-vis applicability of the report solely relates to the category no. as per the latest Hazardous Waste Rules as or as would be assigned by the concerned statutory authority

The report cannot be produced in part or in full without the permission of West Bengal Waste Management Limited

--END OF THE TEST REPORT--

  
(Chemist – Lab.)  
Checked by

  
Tarun Kumar Mirdya  
(Lab. – Manager)  
Authorized Signatory





Sustainability



ISO 9001, 45001, 14001

**WEST BENGAL WASTE MANAGEMENT LTD.**

(A Division of Re Sustainability Limited)

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CIN : U90002WB2004PLC098219

**LABORATORY  
TEST REPORT**

Name and Address of the Client : M/s Tata Steel Ltd. (HMC Div.)  
Patikhali, P.O.- Haldia Oil Refinery, Haldia, Purba Medinipur- 721606.

Sample / Product description : Hazardous Waste.

Sample Description : Waste ceramic blanket.

Sample Collected by : WBWML Laboratory.

Sample quantity : 500 gm.

Sampling Date and Method : 6<sup>th</sup> June'2023, Grab (WBWML/SOP/LAB/101)

Sample Received date : 6<sup>th</sup> June'2023

Sample Registration No. and Date : WBWML/CA/23-120, 6<sup>th</sup> June'2023

Sample Receipt Condition : Sample recd. in plastic pouch.

Analysis Starting Date : 6<sup>th</sup> June'2023

Analysis Completion & Report Date : 13<sup>th</sup> June'2023

Date of report validity : 12<sup>th</sup> June'2025

Sub-contracting of Analysis : None

**TEST RESULT**

Sl. no.	Parameter	Unit	Method	Observation / Result	Std. for Secure Landfill Disposal / Limits as per schedule II of HWM Rules 2016.
1	Physical State	–	Visual observation	Dry solid	–
2	Color	–	Visual observation	Whitish grey	–
3	Texture	–	Visual observation	Pieces	–
4	Reactive Cyanide	mg/kg	SW-846 : Ch. 7 (7.3.3), 9014	< 1.00	–
5	Reactive Sulfide	mg/kg	SW-846 : Ch. 7 (7.3.4), 9034	< 5.00	–
6	Cyanide – Total	mg/kg	SW-846 : 9010B, 9014	< 1.00	–
7	Cyanide – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 4500-CN <sup>-</sup> C SW-846 : 9014	< 0.05	< 2.0
8	Fluoride – Total	mg/kg	Std. Methods : 4500-F <sup>-</sup> B, D	< 1.00	–
9	Fluoride – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 4500F <sup>-</sup> B, D	< 1.00	< 50.0
10	Nitrate – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 4500-NO <sub>3</sub> <sup>-</sup> E	< 0.10	< 30.0
11	Ammonia – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 4500-NH <sub>3</sub> B, C	< 5.00	< 1000.0
12	Arsenic – Total	mg/kg	SW-846 : 3050B Std. Methods:3500-As B :2017	< 1.00	–
13	Arsenic – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods:3500-As B :2017	< 0.10	< 1.0
14	Phenol – WLT	mg/L	DIN : 38414 Part 4 (S4) SW-846 : 9065	< 1.00	< 100.0
15	Mercury – Total	mg/kg	SW-846 : 7471A Std. Methods : 3112 B :2017	NA	–
16	Mercury – WLT	mg/L	DIN : 38414 Part 4 (S4) SW-846 : 7470A Std. Methods : 3112 B :2017	NA	< 0.10

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