



# SCIENTIFIC RESEARCH LABORATORY

An ISO 9001:2015 (QMS) & OHSMS 45001:2018 Certified Organization

Accredited by NABL & Jharkhand State Pollution Control Board

Analytical & Environmental Engineering Laboratory

C- 144, Aman Green City, Pundag, Ranchi- 834 004, Jharkhand

Tele No.: 0651-4057244, Mobile: 94701 30700, E-mail: nirajksingh2003@yahoo.co.in

## TEST REPORT

Issued to:	Test Report No.	: SRL/RCMPL/MAR-AAQ/23-01
M/s Radha Casting & Metalik (P) Limited. (M. S. Ingot Unit), At.: Paiki, P.O.: Marar, District: Ramgarh, Jharkhand.	Report Issue Date	: 18.03.2023
	Sample Receipt Date	: 07.03.2023
	Analysis Date	: 09.03.2023 to 15.03.2023
	Weather Condition	: Clear
	Atmospheric Temp. ( <sup>o</sup> C)	: 32
	Relative Humidity (%)	: 48
	Wind Speed (Km/hr)	: 6.4
	Wind Direction (From)	: WNW

Nature and Description of Sample	: Ambient Air Quality Monitoring (AAQM)
Type of Sample	: Ambient Air
Date of Sampling	: 06.03.2023 to 07.03.2023
Sampling Location	: Near Main Gate (Beside Office Building)
Sample Condition	: Refrigerated
Name of the Sample Collecting Officer	: Sri Rohit Kumar Singh & others
Any Other Information (if any)	: Nil

## TEST RESULTS

Sl. No.	Parameters	Results	Regulatory Standards (NAAQS)*	Test Method
1.	Sulphur Dioxide, (SO <sub>2</sub> ), µg/m <sup>3</sup>	16.00	80 (24 hrs.)	IS: 5182 (Part- 2) 2001
2.	Nitrogen Dioxide, (NO <sub>2</sub> ), µg/m <sup>3</sup>	32.50	80 (24 hrs.)	IS: 5182 (Part- 6) 2006
3.	Particulate Matter, PM <sub>10</sub> , µg/m <sup>3</sup>	82.00	100 (24 hrs.)	IS: 5182 (Part- 23) 2006
4.	Particulate Matter, PM <sub>2.5</sub> , µg/m <sup>3</sup>	46.00	60 (24 hrs.)	IS: 5182 (Part- 24) 2006
5.	Ammonia (NH <sub>3</sub> ), µg/m <sup>3</sup>	26.00	400 (24 hrs.)	IS: 5182 (Part- 25) 2018
6.	Ozone (O <sub>3</sub> ), µg/m <sup>3</sup>	31.00	180 (1 hr.)	ISC 411, 3 <sup>rd</sup> Edition 1999
7.	Arsenic (As), ng/m <sup>3</sup>	<1.00	6 (Annual)	ISC 411, 3 <sup>rd</sup> Edition 1999
8.	Lead (Pb), µg/m <sup>3</sup>	0.08	1 (24 hr.)	IS 5182 (Part-22): 2004
9.	Nickel (Ni), ng/m <sup>3</sup>	<5.00	20 (Annual)	IS 5182 (Part-26): 2020
10.	Carbon Monoxide (CO), mg/m <sup>3</sup>	0.76	4 (1 hr.)	CPCB Guidelines AAP Vol. I & II
11.	Benzene (C <sub>6</sub> H <sub>6</sub> ), µg/m <sup>3</sup>	<0.01	05 (Annual)	CPCB Guidelines AAP Vol. I & II
12.	Benzo (a) Pyrene (BaP), ng/m <sup>3</sup>	<0.01	01 (Annual)	CPCB Guidelines AAP Vol. I & II

\*NAAQS: National Ambient Air Quality Standards.

Note:

1. The results relate only to the items sampled and tested.
2. Test report shall not be reproduced except in full without written approval of the laboratory.

Dr. Niraj Kumar Singh  
(Authorized Signatory)

-- End of the Report --



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Tele No.: 0651-4057244, Mobile: 94701 30700, E-mail: nirajksingh2003@yahoo.co.in

## TEST REPORT

Issued to:	Test Report No.	: SRL/RCMPL/MAR-AAQ/23-02
M/s Radha Casting & Metalik (P) Limited. (M. S. Ingot Unit), At.: Paiki, P.O.: Marar, District: Ramgarh, Jharkhand.	Report Issue Date	: 18.03.2023
	Sample Receipt Date	: 07.03.2023
	Analysis Date	: 09.03.2023 to 15.03.2023
	Weather Condition	: Clear
	Atmospheric Temp. ( <sup>o</sup> C)	: 32
	Relative Humidity (%)	: 48
	Wind Speed (Km/hr)	: 6.4
	Wind Direction (From)	: WNW

Nature and Description of Sample	: Ambient Air Quality Monitoring (AAQM)
Type of Sample	: Ambient Air
Date of Sampling	: 06.03.2023 to 07.03.2023
Sampling Location	: Near South – East Boundary
Sample Condition	: Refrigerated
Name of the Sample Collecting Officer	: Sri Rohit Kumar Singh & others
Any Other Information (if any)	: Nil

## TEST RESULTS

Sl. No.	Parameters	Results	Regulatory Standards (NAAQS)*	Test Method
1.	Sulphur Dioxide, (SO <sub>2</sub> ), µg/m <sup>3</sup>	17.50	80 (24 hrs.)	IS: 5182 (Part- 2) 2001
2.	Nitrogen Dioxide, (NO <sub>2</sub> ), µg/m <sup>3</sup>	36.20	80 (24 hrs.)	IS: 5182 (Part- 6) 2006
3.	Particulate Matter, PM <sub>10</sub> , µg/m <sup>3</sup>	87.50	100 (24 hrs.)	IS: 5182 (Part- 23) 2006
4.	Particulate Matter, PM <sub>2.5</sub> , µg/m <sup>3</sup>	49.00	60 (24 hrs.)	IS: 5182 (Part- 24) 2006
5.	Ammonia (NH <sub>3</sub> ), µg/m <sup>3</sup>	28.00	400 (24 hrs.)	IS: 5182 (Part- 25) 2018
6.	Ozone (O <sub>3</sub> ), µg/m <sup>3</sup>	35.00	180 (1 hr.)	ISC 411, 3 <sup>rd</sup> Edition 1999
7.	Arsenic (As), ng/m <sup>3</sup>	<1.00	6 (Annual)	ISC 411, 3 <sup>rd</sup> Edition 1999
8.	Lead (Pb), µg/m <sup>3</sup>	0.10	1 (24 hr.)	IS 5182 (Part-22): 2004
9.	Nickel (Ni), ng/m <sup>3</sup>	<5.00	20 (Annual)	IS 5182 (Part-26): 2020
10.	Carbon Monoxide (CO), mg/m <sup>3</sup>	0.78	4 (1 hr.)	CPCB Guidelines AAP Vol. I & II
11.	Benzene (C <sub>6</sub> H <sub>6</sub> ), µg/m <sup>3</sup>	<0.01	05 (Annual)	CPCB Guidelines AAP Vol. I & II
12.	Benzo (a) Pyrene (BaP), ng/m <sup>3</sup>	<0.01	01 (Annual)	CPCB Guidelines AAP Vol. I & II

\*NAAQS: National Ambient Air Quality Standards.

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## TEST REPORT

Issued to:	Test Report No.	: SRL/RCMPL/MAR-AAQ/23-03
M/s Radha Casting & Metalik (P) Limited. (M. S. Ingot Unit), At.: Paiki, P.O.: Marar, District: Ramgarh, Jharkhand.	Report Issue Date	: 18.03.2023
	Sample Receipt Date	: 07.03.2023
	Analysis Date	: 09.03.2023 to 15.03.2023
	Weather Condition	: Clear
	Atmospheric Temp. ( <sup>o</sup> C)	: 32
	Relative Humidity (%)	: 48
	Wind Speed (Km/hr)	: 6.4
	Wind Direction (From)	: WNW

Nature and Description of Sample	: Ambient Air Quality Monitoring (AAQM)
Type of Sample	: Ambient Air Quality
Date of Sampling	: 06.03.2023 to 07.03.2023
Sampling Location	: Near South – West Boundary (Beside Laboratory)
Sample Condition	: Refrigerated
Name of the Sample Collecting Officer	: Sri Rohit Kumar Singh & others
Any Other Information (if any)	: Nil

## TEST RESULTS

Sl. No.	Parameters	Results	Regulatory Standards (NAAQS)*	Test Method
1.	Sulphur Dioxide, (SO <sub>2</sub> ), µg/m <sup>3</sup>	17.40	80 (24 hrs.)	IS: 5182 (Part- 2) 2001
2.	Nitrogen Dioxide, (NO <sub>2</sub> ), µg/m <sup>3</sup>	33.50	80 (24 hrs.)	IS: 5182 (Part- 6) 2006
3.	Particulate Matter, PM <sub>10</sub> , µg/m <sup>3</sup>	85.00	100 (24 hrs.)	IS: 5182 (Part- 23) 2006
4.	Particulate Matter, PM <sub>2.5</sub> , µg/m <sup>3</sup>	48.00	60 (24 hrs.)	IS: 5182 (Part- 24) 2006
5.	Ammonia (NH <sub>3</sub> ), µg/m <sup>3</sup>	28.00	400 (24 hrs.)	IS: 5182 (Part- 25) 2018
6.	Ozone (O <sub>3</sub> ), µg/m <sup>3</sup>	34.00	180 (1 hr.)	ISC 411, 3 <sup>rd</sup> Edition 1999
7.	Arsenic (As), ng/m <sup>3</sup>	<1.00	6 (Annual)	ISC 411, 3 <sup>rd</sup> Edition 1999
8.	Lead (Pb), µg/m <sup>3</sup>	0.08	1 (24 hr.)	IS 5182 (Part-22): 2004
9.	Nickel (Ni), ng/m <sup>3</sup>	<5.00	20 (Annual)	IS 5182 (Part-26): 2020
10.	Carbon Monoxide (CO), mg/m <sup>3</sup>	0.80	4 (1 hr.)	CPCB Guidelines AAP Vol. I & II
11.	Benzene (C <sub>6</sub> H <sub>6</sub> ), µg/m <sup>3</sup>	<0.01	05 (Annual)	CPCB Guidelines AAP Vol. I & II
12.	Benzo (a) Pyrene (BaP), ng/m <sup>3</sup>	<0.01	01 (Annual)	CPCB Guidelines AAP Vol. I & II

\*NAAQS: National Ambient Air Quality Standards.

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## TEST REPORT

Issued to:	Test Report No.	: SRL/RCMPL/MAR-AAQ/23-04
M/s Radha Casting & Metalik (P) Limited. (M. S. Ingot Unit), At.: Paiki, P.O.: Marar, District: Ramgarh, Jharkhand	Report Issue Date	: 18.03.2023
	Sample Receipt Date	: 07.03.2023
	Analysis Date	: 09.03.2023 to 15.03.2023
	Weather Condition	: Clear
	Atmospheric Temp. ( <sup>o</sup> C)	: 32
	Relative Humidity (%)	: 48
	Wind Speed (Km/hr)	: 6.4
	Wind Direction (From)	: WNW

Nature and Description of Sample	: Ambient Air Quality Monitoring (AAQM)
Type of Sample	: Ambient Air Quality
Date of Sampling	: 06.03.2023 to 07.03.2023
Sampling Location	: Near Staff Quarter
Sample Condition	: Refrigerated
Name of the Sample Collecting Officer	: Sri Rohit Kumar Singh & others
Any Other Information (if any)	: Nil

## TEST RESULTS

Sl. No.	Parameters	Results	Regulatory Standards (NAAQS)*	Test Method
1.	Sulphur Dioxide, (SO <sub>2</sub> ), µg/m <sup>3</sup>	18.20	80 (24 hrs.)	IS: 5182 (Part- 2) 2001
2.	Nitrogen Dioxide, (NO <sub>2</sub> ), µg/m <sup>3</sup>	37.00	80 (24 hrs.)	IS: 5182 (Part- 6) 2006
3.	Particulate Matter, PM <sub>10</sub> , µg/m <sup>3</sup>	88.00	100 (24 hrs.)	IS: 5182 (Part- 23) 2006
4.	Particulate Matter, PM <sub>2.5</sub> , µg/m <sup>3</sup>	49.00	60 (24 hrs.)	IS: 5182 (Part- 24) 2006
5.	Ammonia (NH <sub>3</sub> ), µg/m <sup>3</sup>	32.00	400 (24 hrs.)	IS: 5182 (Part- 25) 2018
6.	Ozone (O <sub>3</sub> ), µg/m <sup>3</sup>	35.20	180 (1 hr.)	ISC 411, 3 <sup>rd</sup> Edition 1999
7.	Arsenic (As), ng/m <sup>3</sup>	<1.00	6 (Annual)	ISC 411, 3 <sup>rd</sup> Edition 1999
8.	Lead (Pb), µg/m <sup>3</sup>	0.11	1 (24 hr.)	IS 5182 (Part-22): 2004
9.	Nickel (Ni), ng/m <sup>3</sup>	<5.00	20 (Annual)	IS 5182 (Part-26): 2020
10.	Carbon Monoxide (CO), mg/m <sup>3</sup>	0.81	4 (1 hr.)	CPCB Guidelines AAP Vol. I & II
11.	Benzene (C <sub>6</sub> H <sub>6</sub> ), µg/m <sup>3</sup>	<0.01	05 (Annual)	CPCB Guidelines AAP Vol. I & II
12.	Benzo (a) Pyrene (BaP), ng/m <sup>3</sup>	<0.01	01 (Annual)	CPCB Guidelines AAP Vol. I & II

\*NAAQS: National Ambient Air Quality Standards.

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## TEST REPORT

Issued to:	Test Report No.	: SRL/RCMPL/MAR-WZ./23-05
M/s Radha Casting & Metalik (P) Limited. (M. S. Ingot Unit), At.: Paiki, P.O.: Marar, District: Ramgarh, Jharkhand	Report Issue Date	: 18.03.2023
	Sample Receipt Date	: 07.03.2023
	Analysis Date	: 10.03.2023
	Weather Condition	: Clear
	Atmospheric Temp. ( <sup>o</sup> C)	: 32
	Relative Humidity (%)	: 46
	Wind Speed (Km/hour)	: 6.2
	Wind Direction (From)	: WNW

Nature and Description of Sample	: Air Quality Monitoring (Work Zone)
Type of Sample	: Work Zone Fugitive Dust
Date of Sampling	: 07.03.2023
Sampling Method	: IS: 5182 (Part- 23) 2006
Name of the Sample Collecting Officer	: Sri Rohit Kumar Singh
Any Other Information (if any)	: Nil

## TEST RESULTS

Sl. No.	Location	Unit	Regulatory Standards*	Results
1.	Near Raw Material Handling Yard	$\mu\text{g}/\text{m}^3$	2000	1720
2.	Near Induction Furnace	$\mu\text{g}/\text{m}^3$	2000	1814
3.	Near Finished Product Exit Point	$\mu\text{g}/\text{m}^3$	2000	1696
4.	Near Slag Crushing Unit (About 10m from Crushing Unit)	$\mu\text{g}/\text{m}^3$	2000	1842

\* Norms for Fugitive Emission: MoEF & CC Notification, 18<sup>th</sup> March, 2016.

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## TEST REPORT

Issued to:	Test Report No.	: SRL/RCMPL/MAR-EFF/23-06
M/s Radha Casting & Metalik (P) Limited. (M. S. Ingot Unit), At.: Paiki, P.O.: Marar, District: Ramgarh, Jharkhand	Report Issue Date	: 18.03.2023
	Sample Receipt Date	: 07.03.2023
	Analysis Date	: 09.03.2023 to 13.03.2023
	Lab. Sample No.	: SRL/EW-01

Type of Sample	: Cooling Tower Blow – Down Water	Sample Quantity	: 1 Litre
Weather Condition	: Clear	Sample Condition	: Refrigerated
Date of Sampling	: 07.03.2023	Sampling Method	: APHA 23 <sup>rd</sup> Edition, 1060B
Location of Sample	: Outlet of Cooling Tower Tank	Sample Collected by	: Sri Rohit Kumar Singh

## TEST RESULTS

Sl. No.	Parameters	Results	Regulatory Standard			Test Method
			Inland Surface Water Body	Public Sewer	On Land Irrigation	
1.	pH	7.4	5.5 – 9.0	5.5 – 9.0	5.5 – 9.0	APHA 23 <sup>rd</sup> Edn. 4500H+ B
2.	Total Suspended Solids, mg/l	38	100	600	200	APHA 23 <sup>rd</sup> Edn. 2540 D
3.	Total Dissolved Solids, mg/l	216	-	-	-	APHA 23 <sup>rd</sup> Edn. 4500 O C
4.	Total Solids, mg/l	254	-	-	-	APHA 23 <sup>rd</sup> Edn. 2540 B
5.	COD (as O <sub>2</sub> ), mg/l	46	250	-	-	IS: 3025 (Part 58) 2006
6.	BOD (3 days at 27 °C), mg/l	12	30	350	100	IS: 3025 (Part 44) 2012
7.	Oil & Grease, mg/l	<5	10	20	10	IS: 3025 (Part 39) 1991

### Note:

1. The results relate only to the items sampled and tested.
2. Test report shall not be reproduced except in full, without written approval of the laboratory.
3. Sample shall be discarded after 15 days from the date of issue of the test reports.

*Niraj*

Dr. Niraj Kumar Singh  
(Authorized Signatory)

-- End of the Report --



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Tele No.: 0651-4057244, Mobile: 94701 30700, E-mail: nirajksingh2003@yahoo.co.in

## TEST REPORT

Issued to:	Test Report No.	: SRL/RCMPL/MAR-ST/23-07
M/s Radha Casting & Metalik (P) Limited. (M. S. Ingot Unit), At.: Paiki, P.O.: Marar, District: Ramgarh, Jharkhand.	Report Issue Date	: 18.03.2023
	Date of Sampling	: 06.03.2023
	Sample Receipt Date	: 07.03.2023
	Analysis Date	: 10.03.2023 to 11.03.2023

### A. INFORMATION OF PHYSICAL CHARACTERISTICS OF STACK

Stack number if any	: Stack – 1 (Induction Furnace)
Emission due to	: Burning of Raw Materials
Material of construction of stack	: M.S.
Shape of stack	: Circular
Whether stack is provided with permanent platform/ ladder	: Yes
Height of the stack from ground level (in meter)	: 21.26
Height of the sampling point from ground level (in meter)	: 7.62
Diameter of the stack at sampling point (in meter)	: 0.40
Fuel used & Consumption	: Electricity (Electric Furnace)
Production Capacity	: 15,000 T/ Annum
Stack connected to	: Fume Extraction System & Wet Scrubber

### B. DETAIL OF STACK EMISSION SAMPLING AND TEST REPORT

Parameters (Units)	Results	Test Method
Ambient air temperature ( $^{\circ}\text{C}$ )	: 32	IS 11255 (Part 3): 2008 RA 2013
Stack gas temperature, ( $^{\circ}\text{C}$ )	: 96	IS 11255 (Part 3): 2008 RA 2013
Barometric Pressure, (mm of Hg)	: 760	-
Stack gas velocity, (m/sec)	: 6.70	IS 11255 (Part 3): 2008 RA 2013
Volumetric flow rate (in $\text{Nm}^3/\text{hr}$ ),	: 2448	IS 11255 (Part 3): 2008 RA 2013
Emission rate (in kg/hr)	: 0.157	IS 11255 (Part 3): 2008 RA 2013
Conc. of Carbon dioxide, (% v/v by Orsat method)	: <0.2	IS 13270; 1992 RA 2019
Conc. of Carbon monoxide, (% v/v by Orsat method)	: 5.4	IS 13270; 1992 RA 2019
Conc. of Sulphur Dioxides, $\text{mg}/\text{Nm}^3$	: 14	IS: 11255 (Part 2) 1985 RA 2019
Conc. of Oxides of Nitrogen, $\text{mg}/\text{Nm}^3$	: 29	IS: 11255 (Part 7) 2005 RA 2017
Conc. of Particulate Matter, $\text{mg}/\text{Nm}^3$	: 64	IS: 11255 (Part 1) 1985 RA 2019

Remarks: Dust concentration was found  $64 \text{ mg}/\text{Nm}^3$  against prescribed limit of  $100 \text{ mg}/\text{Nm}^3$ .

Note:

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## TEST REPORT

Issued to:	Test Report No.	: SRL/RCMPL/DEC-ST/23-08
M/s Radha Casting & Metalik (P) Limited. (M. S. Ingot Unit), At.: Paiki, P.O.: Marar, District: Ramgarh, Jharkhand..	Report Issue Date	: 18.03.2023
	Date of Sampling	: 06.03.2023
	Sample Receipt Date	: 07.03.2023
	Analysis Date	: 10.03.2023 to 11.03.2023

### C. INFORMATION OF PHYSICAL CHARACTERISTICS OF STACK

Stack number if any	: Stack – 2 (Mini Blast Furnace Stack)
Emission due to	: Burning of Raw Materials
Material of construction of stack	: M.S.
Shape of stack	: Circular
Whether stack is provided with permanent platform/ ladder	: Yes
Height of the stack from ground level (in meter)	: 26
Height of the sampling point from ground level (in meter)	: 12.6
Diameter of the stack at sampling point (in meter)	: 0.82
Fuel used & Consumption	: Electricity (Electric Furnace)
Production Capacity	: 15000 MT/ Annum (Pig Iron)
Stack connected to	: GCP & Bag Filter

### D. DETAIL OF STACK EMISSION SAMPLING AND TEST REPORT

Parameters (Units)	Results	Test Method
Ambient air temperature ( $^{\circ}\text{C}$ )	32	IS 11255 (Part 3): 2008 RA 2013
Stack gas temperature, ( $^{\circ}\text{C}$ )	134	IS 11255 (Part 3): 2008 RA 2013
Barometric Pressure, (mm of Hg)	760	-
Stack gas velocity, (m/sec)	6.82	IS 11255 (Part 3): 2008 RA 2013
Volumetric flow rate (in $\text{Nm}^3/\text{hr}$ ),	9497	IS 11255 (Part 3): 2008 RA 2013
Emission rate (in kg/hr)	0.40	IS 11255 (Part 3): 2008 RA 2013
Conc. of Carbon dioxide, (% v/v by Orsat method)	<0.2	IS 13270; 1992 RA 2019
Conc. of Carbon monoxide, (% v/v by Orsat method)	5.2	IS 13270; 1992 RA 2019
Conc. of Sulphur Dioxides, $\text{mg}/\text{Nm}^3$	11	IS: 11255 (Part 2) 1985 RA 2019
Conc. of Oxides of Nitrogen, $\text{mg}/\text{Nm}^3$	26	IS: 11255 (Part 7) 2005 RA 2017
Conc. of Particulate Matter, $\text{mg}/\text{Nm}^3$	42	IS: 11255 (Part 1) 1985 RA 2019

Remarks: Dust concentration was found  $42 \text{ mg}/\text{Nm}^3$  against prescribed limit of  $50 \text{ mg}/\text{Nm}^3$ .

Note:

- The results relate only to the items sampled and tested.
- Test report shall not be reproduced except in full without written approval of the laboratory.

Dr. Niraj Kumar Singh  
(Authorized Signatory)

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## TEST REPORT

Issued to:	Test Report No.	: SRL/RCMPL/MAR-N/23-09
M/s Radha Casting & Metalik (P) Limited. (M. S. Ingot Unit), At.: Paiki, P.O.: Marar, District: Ramgarh, Jharkhand.	Report Issue Date	: 18.03.2023
	Sample Receipt Date	: 07.03.2023
	Analysis Date	: 11.03.2023

Nature and Description of Sample	: Ambient Noise
Weather Condition	: Partly Cloudy
Atmospheric Temperature ( <sup>o</sup> C)	: 32
Name of the Sample Collecting Officer	: Sri Rohit Kumar Singh
Any Other Information (if any)	: Nil

## AMBIENT NOISE MONITORING DATA

Sl. No.	Monitoring Location	Date of Monitoring	Sound Pressure Level, dB(A)	
			Day Time (06.00-22.00 hr.)	Night Time (22.00-06.00 hr.)
1.	Near Main Gate (Beside Office Building)	06.03.2023 to 07.03.2023	61.5	56.7
2.	Near South – East Boundary	06.03.2023 to 07.03.2023	65.8	62.4
3.	Near South – West Boundary (Beside Laboratory)	06.03.2023 to 07.03.2023	63.6	60.3
4.	Near Staff Quarter	06.03.2023 to 07.03.2023	60.9	55.6

Norms: National Ambient Air Quality Standards (NAAQS) in respect of Noise as per CPCB, New Delhi,

Industrial Area : Day Time 75 dB(A) Leq and Night Time 70 dB(A) Leq

Commercial Area : Day Time 65 dB(A) Leq and Night Time 55 dB(A) Leq

Residential Area : Day Time 55 dB(A) Leq and Night Time 45 dB(A) Leq

Silence Zone : Day Time 50 dB(A) Leq and Night Time 40 dB(A) Leq

Dr. Niraj Kumar Singh  
(Authorized Signatory)

-- End of the Report --



# SCIENTIFIC RESEARCH LABORATORY

An ISO 9001:2015 (QMS) & OHSMS 45001:2018 Certified Organization

Accredited by NABL & Jharkhand State Pollution Control Board

Analytical & Environmental Engineering Laboratory

C- 144, Aman Green City, Pundag, Ranchi- 834 004, Jharkhand

Tele No.: 0651-4057244, Mobile: 94701 30700, E-mail: nirajksingh2003@yahoo.co.in

## TEST REPORT

Issued to:	Test Report No.	: SRL/RCMPL/MAR-L/23-10
M/s Radha Casting & Metalik (P) Limited. (M. S. Ingot Unit), At.: Paiki, P.O.: Marar, District: Ramgarh, Jharkhand	Report Issue Date	: 18.03.2023
	Sample Receipt Date	: 07.03.2023
	Analysis Date	: 09.03.2023 to 13.03.2023
	Lab. Sample No.	: SRL/LT-01

Type of Sample	: Slag (For Leachate Test)	Sample Quantity	: 200 gm.
Weather Condition	: Clear	Sample Condition	: Properly Sealed
Date of Sampling	: 07.03.2023	Sampling Method	: APHA 23 <sup>rd</sup> Edition, 1060B
Location of Sample	: Crushed Slag Storage Area	Sample Collected by	: Sri Rohit Kumar Singh

## TEST RESULTS

Sl. No.	Parameters	EPA Regulatory Level, mg/l	Results (mg/l in extract)
1.	Arsenic (as As)	5.0	<0.020
2.	Cadmium (as Cd)	1.0	<0.010
3.	Chromium (as Cr)	5.0	<0.050
4.	Lead (as Pb)	5.0	<0.050
5.	Mercury (as Hg)	0.2	<0.005
6.	Selenium (as Se)	1.0	<0.010
7.	Copper (as Cu)	5.0	<0.050

[The sample was extracted with extraction fluid- 1 (pH 4.93 ± 0.05) in 1:20 ratio for 18 hours. The extraction fluid was selected after pH study of the sample (Ref: EPA Method 1311: Toxicity Characteristic Leaching Procedure)].

### Note:

1. The results relate only to the items sampled and tested.
2. Test report shall not be reproduced except in full, without written approval of the laboratory.
3. Sample shall be discarded after 15 days from the date of issue of the test reports.

Dr. Niraj Kumar Singh  
(Authorized Signatory)

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## TEST REPORT

Issued to:	Test Report No.	: SRL/RCMPL/MAR-DW/23-11
M/s Radha Casting & Metalik (P) Limited. (M. S. Ingot Unit), At.: Paiki, P.O.: Marar, District: Ramgarh, Jharkhand.	Report Issue Date	: 18/03/2023
	Sample Receipt Date	: 07/03/2023
	Analysis Date	: 09/03/2023 – 13/03/2023
	Lab. Sample No.	: RCMPL/GW – 01

Type of Sample	: Ground Water	Sample Quantity	: 1 Litre
Location of Sample	: Bore Well Behind Office Building	Sample Condition	: Preserved
Date of Sampling	: 07/03/2023	Sampling Method	: APHA 1060 B
Weather Condition	: Clear	Sample Collected by	: SRL

## TEST RESULTS

Sl. No.	Parameters	Results	Regulatory Standards As per IS: 10500 (2012) (Drinking Water Specification)		Test Method (s)
			Desirable Limits	Permissible Limits	
1.	Colour, Hazen units, Max.	<5	5	15	APHA 23 <sup>rd</sup> Edn. 2120 B
2.	Odour	Unobjectionable	Agreeable	Agreeable	APHA 23 <sup>rd</sup> Edn. 2150 B
3.	Taste	Agreeable	Agreeable	Agreeable	APHA 23 <sup>rd</sup> Edn. 2160 B
4.	Turbidity, NTU, Max.	<1	1	5	APHA 23 <sup>rd</sup> Edn. 2130 B
5.	Conductivity, $\mu$ mhos/cm	536	-	-	APHA 23 <sup>rd</sup> Edn. 2510 B
6.	pH Value	7.2	6.5 to 8.5	No relaxation	APHA 23 <sup>rd</sup> Edn. 4500H B
7.	Total Hardness (as CaCO <sub>3</sub> ), mg/l	216	200	600	APHA 23 <sup>rd</sup> Edn. 2340 C
8.	Iron (as Fe), mg/l	0.2	0.3	No relaxation	APHA 23 <sup>rd</sup> Edn. 3500Fe B
9.	Chloride (as Cl), mg/l	26	250	1000	APHA 23 <sup>rd</sup> Edn. 4500 Cl <sup>-</sup> B
10.	Residual Free Chlorine, mg/l	Nil	0.2	1.0	APHA 23 <sup>rd</sup> Edn. 4500 Cl B
11.	Fluoride (as F) mg/L	0.58	1.0	1.5	APHA 23 <sup>rd</sup> Edn. 4500 F D
12.	Dissolved Solids mg/l	320	500	2000	APHA 23 <sup>rd</sup> Edn. 2540 C
13.	Calcium (as Ca), mg/l	48	75	200	APHA 23 <sup>rd</sup> Edn. 3500 Ca B
14.	Magnesium (as Mg), mg/l	21	30	100	APHA 23 <sup>rd</sup> Edn. 3500 Mg B
15.	Copper (Cu), mg/l	<0.01	0.05	1.5	APHA 23 <sup>rd</sup> Edn. 3500 Cu B
16.	Manganese (as Mn), mg/l	0.02	0.1	0.3	APHA 23 <sup>rd</sup> Edn. 3500 Mn B
17.	Sulphate (as SO <sub>4</sub> ), mg/l	14	200	400	APHA 23 <sup>rd</sup> Edn. 4500 SO <sub>4</sub> <sup>-2</sup> E
18.	Nitrate (as NO <sub>3</sub> ), mg/l	1.6	45	No relaxation	APHA 23 <sup>rd</sup> Edn. 4500 NO <sub>3</sub> B
19.	Arsenic (as As), mg/l.	<0.03	0.01	0.05	APHA 23 <sup>rd</sup> Edn. 3500 As B
20.	Lead (as Pb), mg/l	< 0.005	0.01	No relaxation	APHA 23 <sup>rd</sup> Edn. 3500 Pb B
21.	Nickel (as Ni), mg/l	<0.01	0.02	No relaxation	APHA 23 <sup>rd</sup> Edn. 3500 Ni B
22.	Zinc (as Zn), mg/l	<0.01	5	15	APHA 23 <sup>rd</sup> Edn. 3500 Zn B
23.	Alkalinity (as CaCO <sub>3</sub> ) mg/l	210	200	600	APHA 23 <sup>rd</sup> Edn. 2320 B

Note:

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*Niraj*

Dr. Niraj Kumar Singh  
(Authorized Signatory)

-- End of the Report --



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## TEST REPORT

Issued to:	Test Report No.	: SRL/RCMPL/MAR-SW/23-12
M/s Radha Casting & Metalik (P) Limited. (M. S. Ingot Unit), At.: Paiki, P.O.: Marar, District: Ramgarh, Jharkhand.	Report Issue Date	: 18/03/2023
	Sample Receipt Date	: 07/03/2023
	Analysis Date	: 09/03/2023 – 13/03/2023
	Lab. Sample No.	: RCMPL/SW – 01

Type of Sample	: Surface Water (Pond)	Sample Quantity	: 1 Litre
Location of Sample	: Reservoir Water (Within Plant Campus)	Sample Condition	: Preserved
Date of Sampling	: 07/03/2023	Sampling Method	: APHA 1060 B
Weather Condition	: Clear	Sample Collected by	: SRL

## TEST RESULTS

Sl. No.	Parameters	Results	Test Method (s)
1.	Colour, Hazen units, Max.	< 5	APHA 23 <sup>rd</sup> Edn. 2120 B
2.	Turbidity, NTU, Max.	< 5	APHA 23 <sup>rd</sup> Edn. 2130 B
3.	pH Value	7.5	APHA 23 <sup>rd</sup> Edn. 4500H <sup>+</sup> B
4.	Electrical Conductivity, $\mu$ mhos/cm	428	APHA 23 <sup>rd</sup> Edn. 2510 B
5.	Dissolved Oxygen (as O <sub>2</sub> ), mg/l	6.6	APHA 23 <sup>rd</sup> Edn. 4500 O C
6.	BOD, 3 days at 27° C, mg/l	3.4	IS 3025 (Part 44): 1993
7.	Total Hardness (as CaCO <sub>3</sub> ), mg/l, Max.	116	APHA 23 <sup>rd</sup> Edn. 2340 C
8.	Iron (as Fe), mg/l, Max.	< 0.1	APHA 23 <sup>rd</sup> Edn. 3500Fe B
9.	Chloride (as Cl), mg/l, Max.	28	APHA 23 <sup>rd</sup> Edn. 4500 Cl <sup>-</sup> B
10.	Fluoride (as F) mg/L, Max.	0.42	APHA 23 <sup>rd</sup> Edn. 4500 F D
11.	Dissolved Solids mg/l, Max.	256	APHA 23 <sup>rd</sup> Edn. 2540 C
12.	Total Suspended Solids, mg/l, Max	24	APHA 23 <sup>rd</sup> Edn. 2540 D
13.	Calcium (as Ca), mg/l, Max.	36	APHA 23 <sup>rd</sup> Edn. 3500 Ca B
14.	Magnesium (as Mg), mg/L, Max.	14	APHA 23 <sup>rd</sup> Edn. 3500 Mg B
15.	Sodium (as Na), mg/L, Max.	46	APHA 23 <sup>rd</sup> Edn. 3500 Na B
16.	Potassium (as K), mg/L, Max.	11	APHA 23 <sup>rd</sup> Edn. 3500 K B
17.	Copper (Cu), mg/l, Max.	<0.01	APHA 23 <sup>rd</sup> Edn. 3500 Cu B
18.	Manganese (as Mn), mg/l, Max.	<0.05	APHA 23 <sup>rd</sup> Edn. 3500 Mn B
19.	Sulphate (as SO <sub>4</sub> ), mg/l, Max.	24	APHA 23 <sup>rd</sup> Edn. 4500 SO <sub>4</sub> <sup>-2</sup> E
20.	Nitrate (as NO <sub>3</sub> ), mg/l, Max.	16	APHA 23 <sup>rd</sup> Edn. 4500 NO <sub>3</sub> B
21.	Lead (as Pb), mg/l, Max.	< 0.05	APHA 23 <sup>rd</sup> Edn. 3500 Pb B
22.	Zinc (as Zn), mg/l, Max.	< 0.01	APHA 23 <sup>rd</sup> Edn. 3500 Zn B
23.	Nickel (as Ni), mg/l, Max.	< 0.01	APHA 23 <sup>rd</sup> Edn. 3500 Ni B
24.	Alkalinity (as CaCO <sub>3</sub> ) mg/l, Max.	160	APHA 23 <sup>rd</sup> Edn. 2320 B

Water Quality Criteria as per Central Pollution Control Board is as follows:

Parameters	Class A	Class B	Class C	Class D	Class E
1. pH	6.5 – 8.5	6.5-8.5	6.5-8.5	6.5 8.5	6.5-8.5
2. Dissolved Oxygen (as O <sub>2</sub> ), mg/l	6	5	4	4	-
3. BOD, 5 days at 20° C, mg/l	2	3	3	-	-
4. Total Coliform organisms, MPN/100ml	50	500	5X10 <sup>3</sup>	-	-
5. Electrical Conductivity $\mu$ mhos/cm Max	-	-	-	1000	2250
6. Sodium absorption ratio, Max	-	-	-	-	26

**Class A:** Drinking water source without conventional treatment but after dis-infection.

**Class B:** Outdoor bathing (organized).

**Class C:** Drinking water source after conventional treatment and after dis-infection.

**Class D:** Fish culture and Wildlife propagation.

**Class E:** Irrigation, Industrial Cooling, and Controlled Waste Disposal.

**Below E:** Not meeting A, B, C, D & E Criteria.

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(Authorized Signatory)

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