



स्टील अथॉरिटी ऑफ इंडिया लिमिटेड  
STEEL AUTHORITY OF INDIA LIMITED  
कोलियरीज डिवीज़न /COLLIERY DIVISION  
तासरा कोलियरी/TASRA COLLIERY  
पोस्ट ऑफिस चासनाला – 828 135, जिला धनबाद – ( झारखण्ड)  
P.O. CHASNALLA – 828135, DISTT.: DHANBAD (Jharkhand)

Ref. No: -DGM./TASRA/Env.Stat 23-24/ 56.

Date:- 16.09.2024

To,  
The Member Secretary  
Jharkhand State Pollution Control Board  
T.A. Division Building, HEC Campus, Dhurwa  
Ranchi, Jharkhand-834004

Sub: Submission of Environment Statement of Tasra Coal Mining Project of M/s Steel Authority of India Limited for the FY 2023-24.

Ref.: JSPCB/HO/RNC/CTO-15663289/2023/1161 dated 28.06.2023

Dear Sir,

Please find the enclosed herewith “**Environment Statement**” of Tasra Coal Mining Project for the financial year 2023-24 in duly filled in the prescribed format Form-V under rule 24 of the Environment (Protection) Rule 1986.

Thanking you,

Your's faithfully

*[Signature]*  
16/09/2024  
Dy. GM (Mining), Tasra  
Tasra Coal Mining Project  
BSL-Collieries Division, SAIL

Encl: As stated above.

Copy to:

1. Regional Officer, MoEF & CC, Ranchi.
2. Regional office, Dhanbad, Jharkhand.

# [FORM –V]

(See rule 14)

## Environment Statement for the financial year ending the 31<sup>st</sup> March 2024 for Tasra Coal Mining Project of M/s-Steel Authority of India Limited.

### PART-A

- i) Name and address of the owner/occupier of the industry operation or process.  
**Sri Sibaram Banerjee, GM I/C (Tasra & Chasnalla), Central Office, Collieries Division, BSL-Collieries, SAIL, Chasnalla, Dhanbad, Jharkhand- 828135**
- ii) Industry category: - **Mining, Code - 010232.**  
Primary (STC Code): **Primary (Opencast Coal Mine)**  
Secondary (STC Code): **Integrated Iron & Steel Industry**  
Production capacity – Units: **Production Capacity: 4MTPA**  
**OPENCAST COAL MINE PROJECT**  
**(In the FY 2023-24, only 3,33,316 tonne of incidental coal has been produced as the mine is still in developmental stage due to pending Land Acquisition)**

Year of establishment: **2009.**

- iii) Date of the last environmental statement submitted: **28.04.2023**

### PART-B

#### Water and River Material Consumption

- (1) Water consumption m<sup>3</sup>/d:
- Process : **No process is involved in excavation of coal.**
- Cooling : **Nil**
- Domestic : **Nil (Township is yet to be developed)**
- Name of Products:

#### i) Process water consumption per unit of product output

	During the previous financial Year	During the current financial Year
<b>COAL</b>	<b>Nil</b>	<b>Nil</b>

#### ii) Raw Material Consumption

*Name of raw materials	Name of products	Consumption of raw Material per unit of output
		During the Previous financial year (2022-23)
		During the current financial year (2023-24)
1. H S DIESEL	COAL &	0.42 litre/tonne
2. EXPLOSIVES	OVER BURDEN	0.15 kg/tonne
		0.56 litre/tonne
		0.16 kg/tonne

\*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)

1) Pollutants	Quantity of pollutants discharged (mass /day)	Concentration of pollutants in discharges(mass/volume)	Percentage of variation from prescribed standards with reasons
a) Air b) Water	<p>1. Quarterly Sampling and analysis of PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> etc. have been carried out from stations established in the core zone as well as buffer zone of Tasra OCP.</p> <p>2. Monitoring of quality of ground water, surface water (upstream &amp; downstream of mine site) and mine water from core zone and buffer zone of Tasra mine have been regularly monitored.</p> <p>3. All parameters are within limit.</p> <p>4. All parameters are analysis by an NABL Accredited/ISO9001:2008 and OHSAS 18001:2007 certified lab M/s Adity R&amp;D Service (Recognized by Jharkhand State Pollution Control Board), Sindri, Dhanbad, Jharkhand.</p> <p><b>Ambient Air Quality and Water Analysis reports enclosed as ANNEXURE- I.</b></p>		

### PART- D

#### Hazardous Wastes

(As specified under Hazardous Waste Management and Handling Rules, 1989)

Hazardous Wastes	Total Quantity (Kg)	
	During the previous Financial Year	During the current Financial Year
a) From Process b) From Pollution control facilities	<p><b>NO HAZARDOUS WASTES ARE GENERATED.</b></p>	

### PART- E

#### Solid Wastes

	Total Quantity	
	During the previous FY 2022-23	During the current FY 2023-24
	10,31,566.358	7,49,505.632

a) From process	-----NOT APPLICABLE-----
b) From pollution control facility	-----NOT APPLICABLE-----
c) (1) quantity recycled or re-utilised within the unit (2)Sold (3)Disposed	<p><b>Total solid waste generated is being dumped in old abandoned pit in the project area, previously worked by BCCL.</b></p>

\*Solid Wastes comprises broken overlying rocks of coal seams i.e. Over Burden.

### PART-F

Please specify the characterisation (in terms of composition of quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes:

- No hazardous wastes are generated.

- However, solid waste in the form of broken overlying rocks of coal (i.e. Over burden) are generated from open cast mines. Solid wastes are disposed off in the de-coaled area (about 90%) and remaining 10% is disposed off in the over burden dump yards.

#### **PART-G**

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production:

1. Water sprinkling is being done in the quarry area, haul roads, dump yards, loading/unloading areas, weigh bridges, office and surrounding locality to suppress the dust and its generation.
2. HEMMs are under regular maintenance for control of noise.
3. Proper and controlled blasting techniques are undertaken to minimise blast induced ground vibration & noise
4. Piezometer has been installed for ground water level monitoring at Tasra OCP.
5. Drain cleaning all around of mine periphery area.
6. Rain water harvesting system has been installed at various points Chasnalla coal complex (23 units has been installed).
7. ROM Coal is transported from Tasra mine pit to CPP, Chasnalla by tarpaulin covered trucks. Entire coal is being transported by rail mode from railway siding of CCP to captive steel plant of SAIL.
8. PM10 Analyzer has been installed at Tasra Siding.
9. OB generated during small scale mining was used to fill up the old abandoned mine previously worked by M/S BCCL lying well within the earmarked OB dump area.
10. Coal production and waste excavation report enclosed as annexure-II.

#### **PART-H**

Additional measures / investment proposal for environmental protection including abatement of pollution, prevention of pollution:

Further improvement in dust suppression 02 (Two) numbers Mist Generators (Water mist cannon) have been installed at Tasra Siding. The mine is in initial development stage, temporary approach road is being maintained. Approach roads and haul roads are being maintained by road grader and continuous water sprinkling is being done for dust suppression. Natural plants are there at all along of the temporary approach road.

#### **PART-I**

Any other particulars for improving the quality of the environment:

World Environment Day was celebrated on 5<sup>th</sup> June 2024 for spreading environmental awareness amongst the populace surrounding Tasra open cast project. Tree plantation drive was also conducted along the haul road of mine.

## Annexure- I

**Monitoring of Air Quality, Noise Level, and  
Analysis of Water samples at different points  
of Tasra OCP, SAIL – Collieries Division**

**Pre monsoon Season**

**OF**



**SAIL**

**Tasra Colliery Division  
Steel Authority of India Ltd.  
Chasnala – 828135, DHANBAD**



*Prepared by:*

**ADITI R&D SERVICES**

**PLOT NO. I-B/17(P), SINDRI INDUSTRIAL AREA,  
P.O.- DOMGARH, DIST. – DHANBAD-828107  
(JHARKHAND)**



# ADITI R&D SERVICES

Testing Laboratory

Recognised by Jharkhand State Pollution Control Board

AN ISO 9001:2008 and OHSAS 18001:2007 Certified Company

Plot No.- I-B-17 (P)  
Sindri, Industrial Area,  
P.O.- Domgarh, Dist.-Dhanbad  
Jharkhand - 828107

Phone : 0326-2952377

Mobile : 09471358492

09431512608

Ref. No.: ARDS/23-24/ Env.Mon./Tasra/457

Date: 05.06.2023

To  
The Chief General Manager (R&T)  
Tasra Colliery,  
SAIL-CD, Chasnalla  
Dhanbad, Jharkhand.

Sub: Pre-Monsoon Environmental Monitoring Report of Tasra  
OCP, SAIL- Colliery Division

Sir,

We are pleased to submit the Pre-Monsoon Environmental Monitoring Report vide Work Order No.: CD/CC/WO/2023-24/10 Dated 25.05.2023 conducted from 26.05.2023 to 27.05.2023 for Ambient Air Quality, Drinking Water, Surface Water and Noise level Monitoring for your kind perusal and record.

With Best Regards,

Yours faithfully,

  
(S. K. Jha)

Technical Manager

Encl: Environmental Monitoring Report





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## INTRODUCTION ABOUT - ADITI R&D SERVICES

**Aditi R&D Services (ARDS) – Testing Laboratory** is providing specialized testing services to the industries of India from Nov, 2003. We have established our reputation as an organization committed to providing good quality of testing services in the field Environmental, Mechanical and Chemical Testing.

**Aditi R&D Services (ARDS) – Testing Laboratory** is well equipped with wide range of testing facilities in the field of Environmental, Mechanical Testing and Chemical Testing. The laboratory uses regulatory and widely accepted methods such as Indian Standards (IS).

**Aditi R&D Services (ARDS) – Testing Laboratory** is state of art Testing Laboratory managed by highly competent personnel and equipped with highly sophisticated and precise equipments for analyzing quality & Pollution Control.

**Aditi R&D Services (ARDS) – Testing Laboratory** is an independent organization and wishes to be a specialized testing laboratory (or third-party laboratory) to the industry.

In order to ensure highest quality of services the laboratory maintains the management system that fulfills the requirements of the customer, Recognized by the Jharkhand State Pollution Control Board and IS/ISO/IEC 17025:2017.

*Signature*  
05/06/2023





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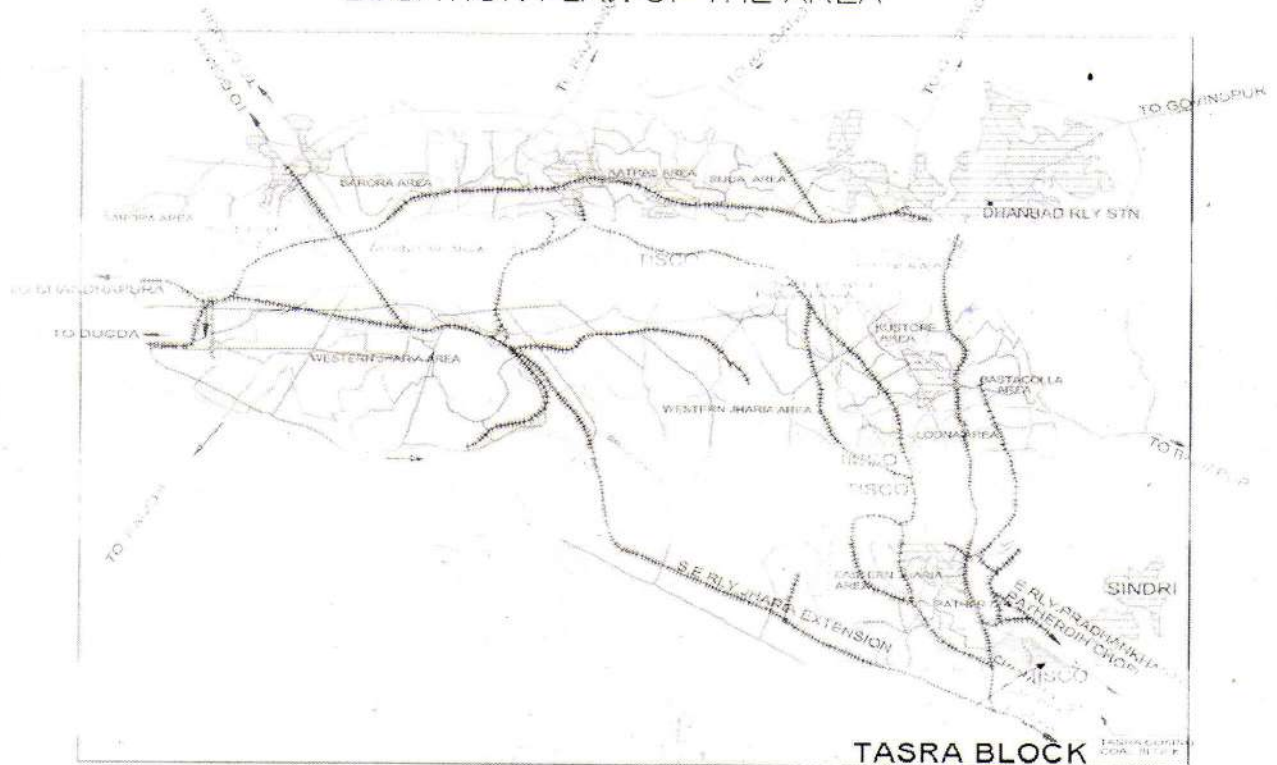
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## Brief Descriptions of TASRA OCP Project:-

Tasra is the eastern most colliery of Jharia coalfield and it was previously under BCCL. Steel Authority of India Ltd. (SAIL) proposes to exploit Tasra Block as captive mine by opencast working method to meet the demand of coking coal to different steel plants of the SAIL.

Tasra Block is located in the eastern most part of Jharia Coalfield, adjacent to Chasnalla colliery. It is 26 km south of the Dhanbad town and bounded by BIT, Sindri in the north, Damodar River in the south, FCIL in the east and Chasnalla colliery in the west. The Dhanbad-Sindri road passes in the north-side of the block and the nearest railway station is Sindri, 4 km north of the block. It covers an area of 4.5 Kilometer Square and bounded by Latitude  $23^{\circ} 38' 25''$  to  $23^{\circ} 39' 58''$  N and Longitude  $86^{\circ} 27' 12''$  to  $86^{\circ} 29' 15''$  E.

LOCATION PLAN OF THE AREA



05/06/2023



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Jharkhand - 828107

Phone : 0326-2952377

Mobile : 09471358492

09431512608

Ref. No.: - ARDS/23-24/419


Date: 01.06.2023

## TEST REPORT OF AMBIENT AIR QUALITY

- Name of the industry : TASRA COLLIERY DIVISION,  
STEEL AUTHORITY OF INDIA LTD.  
CHASNALA – 828135, DHANBAD,
- Work Order Ref. NO.: : CD/CC/WO/2023-24/10 Dated- 25.05.2023
- Date of Sample Collection : 26.05.2023 – 27.05.2023
- Date of Testing : 28.05.2023 – 29.05.2023
- Test Procedure : As per IS-5182
- Sampling Location : Near Devparbha Office Tasra  
(Core Zone)

### TEST RESULTS

	Avg. Ambient Temperature	Average Relative Humidity (%)	Sample 1	Sample 2	NAAQ - CPCB STANDARD
	35	52	26.05.2023	27.05.2023	
Sl No.	Particulars		Value	Value	
1.	Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>		88.12	85.10	100 µg/m <sup>3</sup>
2.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>		49.84	48.36	60 µg/m <sup>3</sup>
3.	SO <sub>2</sub> , µg/m <sup>3</sup>		26.36	25.66	80 µg/m <sup>3</sup>
4.	NO <sub>2</sub> , µg/m <sup>3</sup>		22.40	21.50	80 µg/m <sup>3</sup>
5.	NH <sub>3</sub> , µg/m <sup>3</sup>		16.89	17.18	400 µg/m <sup>3</sup>
6.	CO, mg/m <sup>3</sup>		0.92	0.68	4 mg/m <sup>3</sup>
7.	Pb, µg/m <sup>3</sup>		0.001	0.002	1 µg/m <sup>3</sup>
8.	As, ng/m <sup>3</sup>		BDL	BDL	6 ng/m <sup>3</sup>
9.	Ni, ng/m <sup>3</sup>		BDL	BDL	20 ng/m <sup>3</sup>
10.	Benzene, µg/m <sup>3</sup>		BDL	BDL	5 µg/m <sup>3</sup>
11.	Benzoapyrene ng/m <sup>3</sup>		BDL	BDL	1 ng/m <sup>3</sup>
12.	Ozone, µg/m <sup>3</sup>		13.40	11.50	180 µg/m <sup>3</sup>

  
Sr. Chemist  
Aditi R&D Services



  
Technical Manager  
Aditi R&D Services, Sindri



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P.O.- Domgarh, Dist.-Dhanbad  
Jharkhand - 828107

Phone : 0326-2952377  
Mobile : 09471358492  
09431512608

Ref. No.: - ARDS/23-24/420

Date: 01.06.2023

## TEST REPORT OF AMBIENT AIR QUALITY

- Name of the industry : TASRA COLLIERY DIVISION,  
STEEL AUTHORITY OF INDIA LTD.  
CHASNALA – 828135, DHANBAD,
- Work Order Ref. NO.: : CD/CC/WO/2023-24/10 Dated- 25.05.2023
- Date of Sample Collection : 26.05.2023 – 27.05.2023
- Date of Testing : 28.05.2023 – 29.05.2023
- Test Procedure : As per IS-5182
- Sampling Location : Near Arya Samaj, Sindri  
(Core Zone)

### TEST RESULTS

SI No.	Avg. Ambient Temperature	Average Relative Humidity (%)	Sample 1	Sample 2	NAAQ - CPCB STANDARD
	35	52	26.05.2023	27.05.2023	
SI No.	Particulars		Value	Value	
1.	Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>		82.44	81.25	100 µg/m <sup>3</sup>
2.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>		45.56	46.35	60 µg/m <sup>3</sup>
3.	SO <sub>2</sub> , µg/m <sup>3</sup>		24.60	24.47	80 µg/m <sup>3</sup>
4.	NO <sub>2</sub> , µg/m <sup>3</sup>		20.73	21.35	80 µg/m <sup>3</sup>
5.	NH <sub>3</sub> , µg/m <sup>3</sup>		14.98	13.58	400 µg/m <sup>3</sup>
6.	CO, mg/m <sup>3</sup>		0.94	0.65	4 mg/m <sup>3</sup>
7.	Pb, µg/m <sup>3</sup>		BDL	BDL	1 µg/m <sup>3</sup>
8.	As, ng/m <sup>3</sup>		BDL	BDL	6 ng/m <sup>3</sup>
9.	Ni, ng/m <sup>3</sup>		BDL	BDL	20 ng/m <sup>3</sup>
10.	Benzene, µg/m <sup>3</sup>		BDL	BDL	5 µg/m <sup>3</sup>
11.	Benzoapyrene ng/m <sup>3</sup>		BDL	BDL	1 ng/m <sup>3</sup>
12.	Ozone, µg/m <sup>3</sup>		12.69	14.25	180 µg/m <sup>3</sup>



Sr. Chemist  
Aditi R&D Services



  
Technical Manager  
Aditi R&D Services, Sindri



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P.O.- Domgarh, Dist.-Dhanbad  
Jharkhand - 828107

Phone : 0326-2952377  
Mobile : 09471358492  
09431512608

Ref. No.: - ARDS/23-24/421


Date: 01.06.2023

## TEST REPORT OF AMBIENT AIR QUALITY

- Name of the industry : TASRA COLLIERY DIVISION,  
STEEL AUTHORITY OF INDIA LTD.  
CHASNALA - 828135, DHANBAD
- Work Order Ref. NO.: : CD/CC/WO/2023-24/10 Dated- 25.05.2023
- Date of Sample Collection : 26.05.2023 - 27.05.2023
- Date of Testing : 28.05.2023 - 29.05.2023
- Test Procedure : As per IS-5182
- Sampling Location : K.D. Colony Rorabandh  
(Buffer Zone)

### TEST RESULTS

	Avg. Ambient Temperature	Average Relative Humidity (%)	Sample 1	Sample 2	NAAQ - CPCB STANDARD
	35	52	26.05.2023	27.05.2023	
Sl No.	Particulars		Value	Value	
1.	Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>		76.53	77.20	100 µg/m <sup>3</sup>
2.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>		40.81	39.36	60 µg/m <sup>3</sup>
3.	SO <sub>2</sub> , µg/m <sup>3</sup>		23.04	22.52	80 µg/m <sup>3</sup>
4.	NO <sub>2</sub> , µg/m <sup>3</sup>		18.93	19.58	80 µg/m <sup>3</sup>
5.	NH <sub>3</sub> , µg/m <sup>3</sup>		17.54	16.55	400 µg/m <sup>3</sup>
6.	CO, mg/m <sup>3</sup>		0.82	0.90	4 mg/m <sup>3</sup>
7.	Pb, µg/m <sup>3</sup>		BDL	BDL	1 µg/m <sup>3</sup>
8.	As, ng/m <sup>3</sup>		BDL	BDL	6 ng/m <sup>3</sup>
9.	Ni, ng/m <sup>3</sup>		BDL	BDL	20 ng/m <sup>3</sup>
10.	Benzene, µg/m <sup>3</sup>		BDL	BDL	5 µg/m <sup>3</sup>
11.	Benzoapyrene ng/m <sup>3</sup>		BDL	BDL	1 ng/m <sup>3</sup>
12.	Ozone, µg/m <sup>3</sup>		13.69	15.24	180 µg/m <sup>3</sup>

  
Sr. Chemist  
Aditi R&D Services



  
Technical Manager  
Aditi R&D Services, Sindri



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P.O.- Domgarh, Dist.-Dhanbad  
Jharkhand - 828107  
Phone : 0326-2952377  
Mobile : 09471358492  
09431512608

Ref. No.: - ARDS/23-24/422

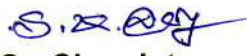
Date: 01.06.2023

## TEST REPORT OF AMBIENT AIR QUALITY

- Name of the industry : TASRA COLLIERY DIVISION,  
STEEL AUTHORITY OF INDIA LTD.  
CHASNALA – 828135, DHANBAD,
- Work Order Ref. NO.: : CD/CC/WO/2023-24/10 Dated- 25.05.2023
- Date of Sample Collection : 26.05.2023 – 27.05.2023
- Date of Testing : 28.05.2023 – 29.05.2023
- Test Procedure : As per IS-5182
- Sampling Location : SINDRI INDUSTRIAL AREA, PLOT NO.- I-B -17(P)  
DOMGARH SINDRI (BUFFER ZONE)

## TEST RESULTS

	Avg. Ambient Temperature	Average Relative Humidity (%)	Sample 1	Sample 2	NAAQ - CPCB STANDARD
	35	52	26.05.2023	27.05.2023	
Sl No.	Particulars		Value	Value	
1.	Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>		76.48	75.82	100 µg/m <sup>3</sup>
2.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>		40.96	39.46	60 µg/m <sup>3</sup>
3.	SO <sub>2</sub> , µg/m <sup>3</sup>		28.40	29.25	80 µg/m <sup>3</sup>
4.	NO <sub>2</sub> , µg/m <sup>3</sup>		21.76	20.34	80 µg/m <sup>3</sup>
5.	NH <sub>3</sub> , µg/m <sup>3</sup>		16.90	17.58	400 µg/m <sup>3</sup>
6.	CO, mg/m <sup>3</sup>		0.90	0.85	4 mg/m <sup>3</sup>
7.	Pb, µg/m <sup>3</sup>		BDL	BDL	1 µg/m <sup>3</sup>
8.	As, ng/m <sup>3</sup>		BDL	BDL	6 ng/m <sup>3</sup>
9.	Ni, ng/m <sup>3</sup>		BDL	BDL	20 ng/m <sup>3</sup>
10.	Benzene, µg/m <sup>3</sup>		BDL	BDL	5 µg/m <sup>3</sup>
11.	Benzoapyrene ng/m <sup>3</sup>		BDL	BDL	1 ng/m <sup>3</sup>
12.	Ozone, µg/m <sup>3</sup>		11.25	12.58	180 µg/m <sup>3</sup>

  
Sr. Chemist  
Aditi R&D Services



  
Technical Manager  
Aditi R&D Services, Sindri



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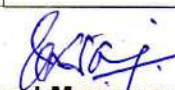
Phone : 0326-2952377  
Mobile : 09471358492  
09431512608

## TEST REPORT OF NOISE (AMBIENT) LEVEL MONITORING

Ref. No. & Date					NAME AND ADDRESS OF THE CLIENT				
ARDS/23-24/ 423 Date: 01.06.2023					TASRA COLLIERY DIVISION STEEL AUTHORITY OF INDIA LTD. CHASNALA – 828135, DHANBAD				
Date of Monitoring									
26.05.2023 TO 27.05.2023					Avg. Ambient Temperature (°C)	Average Humidity (%)	Weather Condition	Status of the plant	
Work Order CD/CC/WO/2023-24/10 Dated- 25.05.2023					35	52	Clear	Running	
MONITORING RESULTS									
Sl. No	Place of Monitoring	Day Time (6 AM to 10 PM) Avg. dB(A)			Night Time (10 PM to 6 AM) Avg. dB(A)			Noise level (Ambient standard) for Industrial Area as per CPCB Noise Pollution (Regulation and Control) (Amendment) Rules , 2000 notified vide S.O. 1046(E)  Dt. 22.11.2020 Limit in dB(A) Leq	
								Day Time	Night Time
LOCATION		MAX	MIN	AVG. dB(A) Leq	MAX	MIN	AVERAGE dB(A) Leq	Industrial Area	Industrial Area
CORE ZONE									
1.	Tasra (Near Mine Site)	72.6	66.8	70.60	66.74	60.68	64.69	75	70
2.	Weigh Bridge	68.4	59.7	65.94	62.80	58.55	61.18		
BUFFER ZONE								Residential Area	Residential Area
1.	KD Colony Rohrabandh	50.92	46.71	49.31	42.39	32.96	39.85	55	45
2.	SINDRI INDUSTRIAL AREA, PLOT NO.- I-B -17(P)	51.27	46.40	49.48	44.30	34.44	41.72		
3.	GM OFFICE, TASRA	46.84	43.56	45.50	39.63	29.36	37.01		
4.	NEAR ARYA SAMAJ	49.69	42.99	47.52	40.86	30.68	38.25		

  
Sr. Chemist  
Aditi R&D Services



  
Technical Manager  
Aditi R&D Services, Sindri



# ADITI R&D SERVICES

Testing Laboratory

Recognised by Jharkhand State Pollution Control Board

Plot No.- I-B-17 (P)  
Sindri, Industrial Area,  
P.O.- Domgarh, Dist.-Dhanbad  
Jharkhand - 828107  
Phone : 0326-2952377  
Mobile : 09471358492  
09431512608

## TEST REPORT OF DRINKING WATER FOR THE MONTH OF MAY 2023

Ref. No. & Date		NAME AND ADDRESS OF THE CLIENT		
ARDS/23-24/424 Dt. 01.06.2023		TASRA COLLIERY DIVISION STEEL AUTHORITY OF INDIA LTD. CHASNALA – 828135, DHANBAD		
P.O. NO. & Date		CD/CC/WO/2023-24/10 Dated- 25.05.2023		
Season		PRE MONSOON		
Location of Sample		KD COLONY ROHARABAND (BUFFER ZONE)		
Sample Description		GROUND WATER		
		Analysis Started on		27.05.2023
Date of Sample Collection		26.05.2023	Analysis completed on	31.05.2023
Test Procedure		IS:3025		
TEST RESULT				
Sl. No.	Parameters	Value	IS: 10500: 2012	
			Accepted Limit	Permissible Limit
1.	Colour Hazen units	1	5	15
2.	Odour	Agreeable	Agreeable	Agreeable
3.	Taste	Agreeable	Agreeable	Agreeable
4.	Turbidity NTU Max	NIL	1	5
5.	Total Dissolved Solids mg/l, Max	509	500	2000
6.	pH Value	8.2	6.5 to 8.5	-
7.	Total Hardness (as CaCO <sub>3</sub> ) mg/l, Max	352	200	600
8.	Calcium (as Ca) mg/l, Max	88	75	200
9.	Magnesium (as Mg)mg/l, Max	31.6	30	100
10.	Copper (as Cu) mg/l, Max	0.001	0.05	1.5
11.	Iron (as Fe) mg/l Max	0.01	0.3	NR
12.	Manganese (as Mn) mg/l, Max	<0.001	0.1	0.3
13.	Chlorides (as Cl) mg/l, Max	46	250	1000
14.	Sulphate (as SO <sub>4</sub> ) mg/l Max	72	200	400
15.	Nitrate mg/l, (as NO <sub>3</sub> )	10.3	45	NR
16.	Fluoride (as F) mg/l	0.70	1.0	1.5
17.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) mg/l, Max	-	0.001	0.002
18.	Mercury (as Hg)mg/l, Max	-	0.001	NR
19.	Cadmium (as Cd) mg/l, Max	-	0.01	NR
20.	Selenium (as Se mg/l, Max	-	0.01	NR
21.	Arsenic (as As) mg/l, Max	<0.001	0.01	0.05
22.	Cyanide (as Cn) mg/l, Max	<0.001	0.05	NR
23.	Lead (As Pb) mg/l Max	<0.001	0.05	NR
24.	Zinc (as Zn) mg/l Max	0.020	5.0	15
25.	Arionic detergents (as MBAS), mg/l, Max	-	0.2	1.0
26.	Chromium (as Cr <sup>+6</sup> ) mg/l	0.004	0.05	NR
27.	Mineral Oil mg/l, Max	-	0.01	NR
28.	Residual, free chlorine mg/l, Min	NIL	0.2	1.0

Remarks: All the parameters of samples tested are within the permissible limit of Drinking Water Standard IS - 10500 : 2012

NR- No Relaxation

*Anandita*  
Sr. Chemist  
Aditi R&D Services



*[Signature]*  
Technical Manager  
Aditi R&D Services, Sindri



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09431512608

## TEST REPORT OF DRINKING WATER FOR THE MONTH OF MAY 2023

Ref. No. & Date	NAME AND ADDRESS OF THE CLIENT		
ARDS/23-24/425 Dt. 01.06.2023	TASRA COLLIERY DIVISION STEEL AUTHORITY OF INDIA LTD. CHASNALA - 828135, DHANBAD		
P.O. NO. & Date	CD/CC/WO/2023-24/10 Dated- 25.05.2023		
Season	PRE MONSOON		
Location of Sample	DUBEY COLONY TASRA (CORE ZONE)		
Sample Description	Ground Water		
Date of Sample Collection		Analysis Started on	27.05.2023
Test Procedure		Analysis completed on	31.05.2023
		IS:3025	

## TEST RESULT

Sl. No.	Parameters	Value	IS: 10500: 2012	
			Accepted Limit	Permissible Limit
1.	Colour Hazen units	1	5	15
2.	Odour	Agreeable	Agreeable	Agreeable
3.	Taste	Agreeable	Agreeable	Agreeable
4.	Turbidity NTU Max	NIL	1	5
5.	Total Dissolved Solids mg/l, Max	769	500	2000
6.	pH Value	6.8	6.5 to 8.5	-
7.	Total Hardness (as CaCO <sub>3</sub> ) mg/l, Max	532	200	600
8.	Calcium (as Ca) mg/l, Max	139.2	75	200
9.	Magnesium (as Mg) mg/l, Max	44.2	30	100
10.	Copper (as Cu) mg/l, Max	0.001	0.05	1.5
11.	Iron (as Fe) mg/l Max	0.01	0.3	NR
12.	Manganese (as Mn) mg/l, Max	<0.001	0.1	0.3
13.	Chlorides (as Cl) mg/l, Max	86	250	1000
14.	Sulphate (as SO <sub>4</sub> ) mg/l Max	79	200	400
15.	Nitrate mg/l, (as NO <sub>3</sub> )	12.3	45	NR
16.	Fluoride (as F) mg/l	0.96	1.0	1.5
17.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) mg/l, Max	-	0.001	0.002
18.	Mercury (as Hg) mg/l, Max	-	0.001	NR
19.	Cadmium (as Cd) mg/l, Max	-	0.01	NR
20.	Selenium (as Se) mg/l, Max	-	0.01	NR
21.	Arsenic (as As) mg/l, Max	<0.001	0.01	0.05
22.	Cyanide (as Cn) mg/l, Max	<0.001	0.05	NR
23.	Lead (As Pb) mg/l Max	0.007	0.05	NR
24.	Zinc (as Zn) mg/l Max	0.097	5.0	15
25.	Arionic detergents (as MBAS), mg/l, Max	-	0.2	1.0
26.	Chromium (as Cr <sup>6+</sup> ) mg/l	0.007	0.05	NR
27.	Mineral Oil mg/l, Max	-	0.01	NR
28.	Residual, free chlorine mg/l, Min	NIL	0.2	1.0

Remarks: All the parameters of samples tested are within the permissible limit of Drinking Water Standard IS - 10500 : 2012

NR- No Relaxation

*Anandita*  
Sr. Chemist  
Aditi R&D Services



*[Signature]*  
Technical Manager  
Aditi R&D Services, Sindri



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09431512608

## TEST REPORT OF DRINKING WATER FOR THE MONTH OF MAY 2023

Ref. No. & Date	NAME AND ADDRESS OF THE CLIENT		
ARDS/23-24/426 Dt. 01.06.2023	TASRA COLLIERY DIVISION STEEL AUTHORITY OF INDIA LTD. CHASNALA - 828135, DHANBAD		
P.O. NO. & Date	CD/CC/WO/2023-24/10 Dated- 25.05.2023		
Season	PRE MONSOON		
Location of Sample	ARYA SAMAJ, SINDRI (BUFFER ZONE)		
Sample Description	Ground Water		
		Analysis Started on	27.05.2023
Date of Sample Collection	26.05.2023	Analysis completed on	31.05.2023
Test Procedure	IS:3025		

## TEST RESULT

Sl. No.	Parameters	Value	IS: 10500: 2012	
			Accepted Limit	Permissible Limit
1.	Colour Hazen units	1	5	15
2.	Odour	Agreeable	Agreeable	Agreeable
3.	Taste	Agreeable	Agreeable	Agreeable
4.	Turbidity NTU Max	1	1	5
5.	Total Dissolved Solids mg/l, Max	744	500	2000
6.	pH Value	6.9	6.5 to 8.5	-
7.	Total Hardness (as CaCO <sub>3</sub> ) mg/l, Max	496	200	600
8.	Calcium (as Ca) mg/l, Max	145.6	75	200
9.	Magnesium (as Mg) mg/l, Max	31.6	30	100
10.	Copper (as Cu) mg/l, Max	0.002	0.05	1.5
11.	Iron (as Fe) mg/l Max	0.02	0.3	NR
12.	Manganese (as Mn) mg/l, Max	0.01	0.1	0.3
13.	Chlorides (as Cl) mg/l, Max	84	250	1000
14.	Sulphate (as SO <sub>4</sub> ) mg/l Max	84	200	400
15.	Nitrate mg/l, (as NO <sub>3</sub> )	4.3	45	NR
16.	Fluoride (as F) mg/l	0.86	1.0	1.5
17.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) mg/l, Max	-	0.001	0.002
18.	Mercury (as Hg) mg/l, Max	-	0.001	NR
19.	Cadmium (as Cd) mg/l, Max	-	0.01	NR
20.	Selenium (as Se) mg/l, Max	-	0.01	NR
21.	Arsenic (as As) mg/l, Max	<0.001	0.01	0.05
22.	Cyanide (as Cn) mg/l, Max	<0.001	0.05	NR
23.	Lead (As Pb) mg/l Max	0.024	0.05	NR
24.	Zinc (as Zn) mg/l Max	0.026	5.0	15
25.	Arionic detergents (as MBAS), mg/l, Max	-	0.2	1.0
26.	Chromium (as Cr <sup>6+</sup> ) mg/l	0.016	0.05	NR
27.	Mineral Oil mg/l, Max	-	0.01	NR
28.	Residual, free chlorine mg/l, Min	NIL	0.2	1.0

Remarks: All the parameters of samples tested are within the permissible limit of Drinking Water Standard IS - 10500 : 2012

NR- No Relaxation

*Anandita*  
Sr. Chemist  
Aditi R&D Services



*[Signature]*  
Technical Manager  
Aditi R&D Services, Sindri



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09431512608

### TEST REPORT OF SURFACE WATER FOR THE MONTH OF MAY 2023

Ref. No. & Date	NAME AND ADDRESS OF THE CLIENT		
ARDS/23-24/427 Dt. 01.06.2023	TASRA COLLIERY DIVISION STEEL AUTHORITY OF INDIA LTD. CHASNALA – 828135, DHANBAD		
P.O. NO. & Date	CD/CC/WO/2023-24/10 Dated- 25.05.2023		
Season	PRE MONSOON		
Location of Sample DAMODAR RIVER DOWNSTREAM OF MINE SITE (BUFFER ZONE)		Analysis Started on	27.05.2023
Date & Time Sample Collection	26.05.2023/ 02:40PM	Analysis completed on	31.05.2023
Test Procedure	IS:3025		

### TEST RESULT

Sl. No.	Parameters	Value	(IS :2296) Surface Water Class "C" Tolerance Limit
1.	Colour Hazen units	3	300
2.	Dissolved Oxygen, mg/l	6.8	4
3.	BOD (3 days at 27°C)	2.2	3
4.	Total Dissolved Solids mg/l, Max	261	1500
5.	pH Value	8.2	6.5 – 8.5
6.	Total Hardness (as CaCO <sub>3</sub> ) mg/l, Max	160	NS
7.	Calcium (as Ca) mg/l, Max	35.2	NS
8.	Magnesium (as Mg)mg/l, Max	17.2	NS
9.	Copper (as Cu) mg/l, Max	0.001	1.5
10.	Iron (as Fe) mg/l Max	0.01	50
11.	Manganese (as Mn) mg/l, Max	<0.001	NS
12.	Chlorides (as Cl) mg/l, Max	22	600
13.	Sulphate (as SO <sub>4</sub> ) mg/l Max	78	400
14.	Nitrate mg/l, (as NO <sub>3</sub> )	8.5	50
15.	Fluoride (as F) mg/l	0.66	1.5
16.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) mg/l, Max	<0.001	0.005
17.	Cadmium (as Cd) mg/l, Max	<0.001	0.01
18.	Oil and grease, mg/l	BDL	0.1
19.	Arsenic (as As) mg/l, Max	<0.001	0.2
20.	Sodium (as Na) mg/l, Max	4	NS
21.	Lead (As Pb) mg/l Max	0.004	0.1
22.	Zinc (as Zn) mg/l Max	0.014	15
23.	Potassium as K)	1	NS
24.	Hexavalent Chromium (as Cr <sup>6+</sup> ) mg/l, Max	<0.001	0.05

Remarks: All the parameters of samples tested are within the permissible limit of General standard. BDL – Below Detection Limit

NS – Not Specified

*Anandita*  
Sr. Chemist  
Aditi R&D Services



*[Signature]*  
Technical Manager  
Aditi R&D Services, Sindri



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09431512608

## TEST REPORT OF SURFACE WATER FOR THE MONTH OF MAY 2023

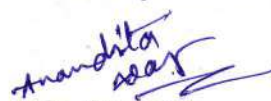
Ref. No. & Date	NAME AND ADDRESS OF THE CLIENT		
ARDS/23-24/428 Dt. 01.06.2023	TASRA COLLIERY DIVISION STEEL AUTHORITY OF INDIA LTD. CHASNALA – 828135, DHANBAD		
P.O. NO. & Date	CD/CC/WO/2023-24/10 Dated- 25.05.2023		
Season	PRE MONSOON		
Location of Sample DAMODAR RIVER UPSTREAM OF MINE SITE (BUFFER ZONE)		Analysis Started on	27.05.2023
Date & Time Sample Collection	26.05.2023/ 02:40PM	Analysis completed on	31.05.2023
Test Procedure	IS:3025		

### TEST RESULT

Sl. No.	Parameters	Value	(IS :2296) Surface Water Class "C" Tolerance Limit
1.	Colour Hazen units	2	300
2.	Dissolved Oxygen, mg/l	7.2	4
3.	BOD (3 days at 27°C)	2.0	3
4.	Total Dissolved Solids mg/l, Max	255	1500
5.	pH Value	8.3	6.5 – 8.5
6.	Total Hardness (as CaCO <sub>3</sub> ) mg/l, Max	152	NS
7.	Calcium (as Ca) mg/l, Max	32	NS
8.	Magnesium (as Mg)mg/l, Max	17.2	NS
9.	Copper (as Cu) mg/l, Max	0.001	1.5
10.	Iron (as Fe) mg/l Max	0.01	50
11.	Manganese (as Mn) mg/l, Max	<0.001	NS
12.	Chlorides (as Cl) mg/l, Max	20	600
13.	Sulphate (as SO <sub>4</sub> ) mg/l Max	73	400
14.	Nitrate mg/l, (as NO <sub>3</sub> )	9.9	50
15.	Fluoride (as F) mg/l	0.67	1.5
16.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) mg/l, Max	<0.001	0.005
17.	Cadmium (as Cd) mg/l, Max	<0.001	0.01
18.	Oil and grease, mg/l	BDL	0.1
19.	Arsenic (as As) mg/l, Max	<0.001	0.2
20.	Sodium (as Na) mg/l, Max	7.1	NS
21.	Lead (As Pb) mg/l Max	<0.001	0.1
22.	Zinc (as Zn) mg/l Max	0.018	15
23.	Potassium as K)	1.3	NS
24.	Hexavalent Chromium (as Cr6 <sup>+</sup> ) mg/l, Max	<0.001	0.05

Remarks: All the parameters of samples tested are within the permissible limit of General standard. BDL – Below Detection Limit

NS – Not Specified

  
Sr. Chemist  
Aditi R&D Services



  
Technical Manager  
Aditi R&D Services, Sindri



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## TEST REPORT OF EFFLUENT WATER FOR THE MONTH OF MAY 2023

Ref. No. & Date	NAME AND ADDRESS OF THE CLIENT			
ARDS/23-24/430 Dt. 01.06.2023	TASRA COLLIERY DIVISION STEEL AUTHORITY OF INDIA LTD. CHASNALA - 828135, DHANBAD			
P.O. NO. & DATE	CD/CC/WO/2023-24/10 DATED- 25.05.2023			
SEASON	PRE MONSOON			
Sample Description	MINE WATER			
Location of Sample	TASRA EXISTING MINE PIT, TASRA OCP (CORE ZONE)	Analysis Started on	27.05.2023	
Date & Time Sample Collection	26.05.2023 03:20 PM	Analysis completed on	31.05.2023	
Test Procedure	IS:3025			
TEST RESULT				
Sl. No.	Parameters	Unit	Value	Effluent Water IS: 2490
1.	pH value	-	7.0	5.5 to 9.0
2.	Colour,	Hazen units,	(<5)	5
3.	Odour*	-	Agreeable	Annexure-1
4.	Conductivity, $\mu\text{S}/\text{cm}$	$\mu\text{S}/\text{cm}$	880	NS
5.	Turbidity (NTU)	NTU	1	NS
6.	Total Dissolved Solids mg/l	mg/l	568	2100
7.	Suspended Solids mg/l, max,	mg/l	14	100
8.	Dissolved Oxygen (DO)	mg/l	7.0	NS
9.	Oil and grease, mg/l	mg/l	0.4	10
10.	Phenolic compounds (as $\text{C}_6\text{H}_5\text{OH}$ ),	mg/l max	<0.01	1.0

NS - Not Specified

*Anandita*  
Sr. Chemist  
Aditi R&D Services



*[Signature]*  
Technical Manager  
Aditi R&D Services, Sindri

**Monitoring of Air Quality, Noise Level, and  
Analysis of Water samples at different points  
of Tasra OCP, SAIL – Collieries Division**

**Monsoon Season**

**OF**



**SAIL**

**Tasra Colliery Division  
Steel Authority of India Ltd.  
Chasnala – 828135, DHANBAD**



*Prepared by:*

**ADITI R&D SERVICES**

**PLOT NO. I-B/17(P), SINDRI INDUSTRIAL AREA,  
P.O.- DOMGARH, DIST. – DHANBAD-828107  
(JHARKHAND)**



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P.O. - Domgarh, Dist. - Dhanbad  
Jharkhand - 828107  
Phone : 0326-2952377  
Mobile : 09471358492  
09431512608

Ref. No.: ARDS/23-24/ Env.Mon./Tasra/0970

Date: 25.08.2023

To  
The Chief General Manager (R&T)  
Tasra Colliery,  
SAIL-CD, Chasnalla  
Dhanbad, Jharkhand.

Sub: Monsoon Environmental Monitoring Report of Tasra  
OCP, SAIL- Colliery Division

Sir,

We are pleased to submit the Monsoon Environmental Monitoring Report vide Work Order No.: CD/CC/WO/2023-24/10 Dated 25.05.2023 conducted from 16.08.2023 to 17.08.2023 for Ambient Air Quality, Drinking Water, Surface Water and Noise level Monitoring for your kind perusal and record.

With Best Regards,

Yours faithfully,

(S. K. Jha)

Technical Manager

Encl: Environmental Monitoring Report





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## INTRODUCTION ABOUT - ADITI R&D SERVICES

**Aditi R&D Services (ARDS) – Testing Laboratory** is providing specialized testing services to the industries of India from Nov, 2003. We have established our reputation as an organization committed to providing good quality of testing services in the field Environmental, Mechanical and Chemical Testing.

**Aditi R&D Services (ARDS) – Testing Laboratory** is well equipped with wide range of testing facilities in the field of Environmental, Mechanical Testing and Chemical Testing. The laboratory uses regulatory and widely accepted methods such as Indian Standards (IS).

**Aditi R&D Services (ARDS) – Testing Laboratory** is state of art Testing Laboratory managed by highly competent personnel and equipped with highly sophisticated and precise equipments for analyzing quality & Pollution Control.

**Aditi R&D Services (ARDS) – Testing Laboratory** is an independent organization and wishes to be a specialized testing laboratory (or third-party laboratory) to the industry.

In order to ensure highest quality of services the laboratory maintains the management system that fulfills the requirements of the customer, Recognized by the Jharkhand State Pollution Control Board and IS/ISO/IEC 17025:2017.





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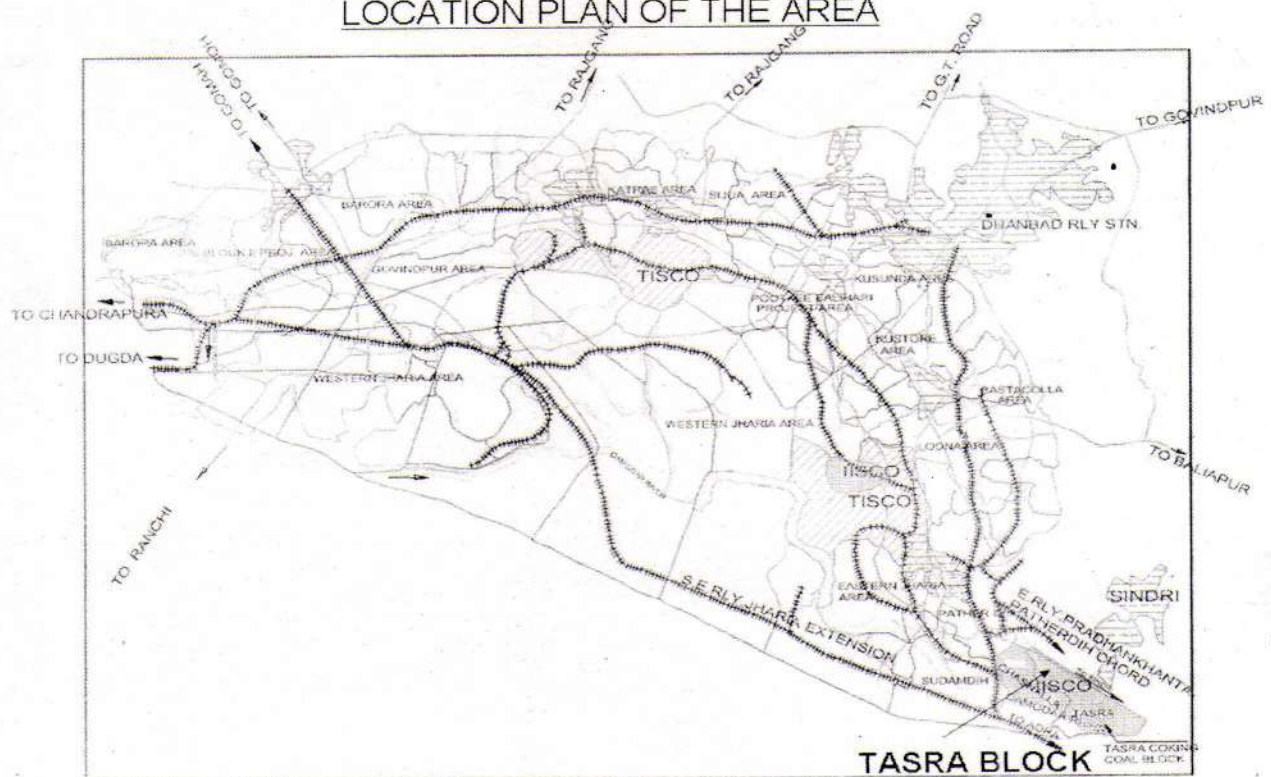
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## Brief Descriptions of TASRA OCP Project:-

Tasra is the eastern most colliery of Jharia coalfield and it was previously under BCCL. Steel Authority of India Ltd. (SAIL) proposes to exploit Tasra Block as captive mine by opencast working method to meet the demand of coking coal to different steel plants of the SAIL.

Tasra Block is located in the eastern most part of Jharia Coalfield, adjacent to Chasnalla colliery. It is 26 km south of the Dhanbad town and bounded by BIT, Sindri in the north, Damodar River in the south, FCIL in the east and Chasnalla colliery in the west. The Dhanbad-Sindri road passes in the north-side of the block and the nearest railway station is Sindri, 4 km north of the block. It covers an area of 4.5 Kilometer Square and bounded by Latitude  $23^{\circ} 38'25''$  to  $23^{\circ}39'58''$ N and Longitude  $86^{\circ}27'12''$  to  $86^{\circ}29'15''$ E.

## LOCATION PLAN OF THE AREA



*Signature*



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Mobile : 09471358492  
09431512608

Ref. No.: - ARDS/23-24/971

Date: 25.08.2023

## TEST REPORT OF AMBIENT AIR QUALITY

- Name of the industry : TASRA COAL MINING PROJECT, COLLIERIES DIVISION,  
STEEL AUTHORITY OF INDIA LTD.  
CHASNALLA – 828135, DIST. - DHANBAD
- Work Order Ref. NO.: : CD/CC/WO/2023-24/10 Dated- 25.05.2023
- Date of Sample Collection : 16.08.2023 – 18.08.2023
- Date of Testing : 19.08.2023 – 22.08.2023
- Test Procedure : As per IS - 5182
- Sampling Location : Near Devparbha Office Tasra  
(Core Zone)

### TEST RESULTS

SI No.	Particulars	Avg. Ambient Temperature	Average Relative Humidity (%)	Sample 1	Sample 2	NAAQ - CPCB STANDARD
		32	72	16.08.2023 – 17.08.2023	17.08.2023 – 18.08.2023	
				Value	Value	
1.	Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>			87.14	83.75	100 µg/m <sup>3</sup>
2.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>			47.45	45.63	60 µg/m <sup>3</sup>
3.	SO <sub>2</sub> , µg/m <sup>3</sup>			36.30	35.61	80 µg/m <sup>3</sup>
4.	NO <sub>2</sub> , µg/m <sup>3</sup>			20.42	19.86	80 µg/m <sup>3</sup>
5.	NH <sub>3</sub> , µg/m <sup>3</sup>			16.12	17.25	400 µg/m <sup>3</sup>
6.	CO, mg/m <sup>3</sup>			0.83	0.78	4 mg/m <sup>3</sup>
7.	Pb, µg/m <sup>3</sup>			0.001	BDL	1 µg/m <sup>3</sup>
8.	As, ng/m <sup>3</sup>			BDL	BDL	6ng/m <sup>3</sup>
9.	Ni, ng/m <sup>3</sup>			BDL	BDL	20ng/m <sup>3</sup>
10.	Benzene, µg/m <sup>3</sup>			BDL	BDL	5 µg/m <sup>3</sup>
11.	Benzoapyreneng/m <sup>3</sup>			BDL	BDL	1ng/m <sup>3</sup>
12.	Ozone, µg/m <sup>3</sup>			14.34	10.66	180 µg/m <sup>3</sup>

S. S. Sanyal  
Sr. Chemist  
Aditi R&D Services



Technical Manager  
Aditi R&D Services, Sindri



# ADITI R&D SERVICES

Testing Laboratory

Recognised by Jharkhand State Pollution Control Board

AN ISO 9001:2008 and OHSAS 18001:2007 Certified Company

Plot No. - I-B-17 (P)  
Sindri, Industrial Area,  
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Mobile : 09471358492  
09431512608

Ref. No.: - ARDS/23-24/972

Date: 25.08.2023

## TEST REPORT OF AMBIENT AIR QUALITY

- Name of the industry : TASRA COAL MINING PROJECT, COLLIERIES DIVISION,  
STEEL AUTHORITY OF INDIA LTD.  
CHASNALLA - 828135, DIST. - DHANBAD
- Work Order Ref. NO.: : CD/CC/WO/2023-24/10 Dated- 25.05.2023
- Date of Sample Collection : 16.08.2023 - 18.08.2023
- Date of Testing : 19.08.2023 - 22.08.2023
- Test Procedure : As per IS-5182
- Sampling Location : Near Arya Samaj, Sindri  
(Core Zone)

### TEST RESULTS

	Avg. Ambient Temperature	Average Relative Humidity (%)	Sample 1	Sample 2	NAAQ - CPCB STANDARD
	32	72	16.08.2023 - 17.08.2023	17.08.2023 - 18.08.2023	
SI No.	Particulars		Value	Value	
1.	Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>		84.58	82.99	100 µg/m <sup>3</sup>
2.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>		46.55	44.79	60 µg/m <sup>3</sup>
3.	SO <sub>2</sub> , µg/m <sup>3</sup>		28.96	27.22	80 µg/m <sup>3</sup>
4.	NO <sub>2</sub> , µg/m <sup>3</sup>		21.76	19.59	80 µg/m <sup>3</sup>
5.	NH <sub>3</sub> , µg/m <sup>3</sup>		15.50	13.84	400 µg/m <sup>3</sup>
6.	CO, mg/m <sup>3</sup>		0.96	0.76	4 mg/m <sup>3</sup>
7.	Pb, µg/m <sup>3</sup>		0.001	0.001	1 µg/m <sup>3</sup>
8.	As, ng/m <sup>3</sup>		BDL	BDL	6ng/m <sup>3</sup>
9.	Ni, ng/m <sup>3</sup>		BDL	BDL	20ng/m <sup>3</sup>
10.	Benzene, µg/m <sup>3</sup>		BDL	BDL	5 µg/m <sup>3</sup>
11.	Benzoapyreneng/m <sup>3</sup>		BDL	BDL	1ng/m <sup>3</sup>
12.	Ozone, µg/m <sup>3</sup>		14.73	12.96	180 µg/m <sup>3</sup>

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Ref. No.: - ARDS/23-24/973

Date: 25.08.2023

## TEST REPORT OF AMBIENT AIR QUALITY

- Name of the industry : TASRA COAL MINING PROJECT, COLLIERIES DIVISION,  
STEEL AUTHORITY OF INDIA LTD.  
CHASNALLA – 828135, DIST. - DHANBAD
- Work Order Ref. NO.: :CD/CC/WO/2023-24/10 Dated- 25.05.2023
- Date of Sample Collection : 16.08.2023 – 18.08.2023
- Date of Testing : 19.08.2023 – 22.08.2023
- Test Procedure : As per IS-5182
- Sampling Location : K.D. Colony Rorabandh

(Buffer Zone)

### TEST RESULTS

SI No.	Particulars	Avg. Ambient Temperature	Average Relative Humidity (%)	Sample 1	Sample 2	NAAQ - CPCB STANDARD
		32	72	16.08.2023 – 17.08.2023	17.08.2023 – 18.08.2023	
SI No.	Particulars	Value		Value		
1.	Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>	72.70		69.15		100 µg/m <sup>3</sup>
2.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>	39.48		37.93		60 µg/m <sup>3</sup>
3.	SO <sub>2</sub> , µg/m <sup>3</sup>	22.34		21.58		80 µg/m <sup>3</sup>
4.	NO <sub>2</sub> , µg/m <sup>3</sup>	19.89		17.95		80 µg/m <sup>3</sup>
5.	NH <sub>3</sub> , µg/m <sup>3</sup>	16.75		14.65		400 µg/m <sup>3</sup>
6.	CO, mg/m <sup>3</sup>	0.92		0.71		4 mg/m <sup>3</sup>
7.	Pb, µg/m <sup>3</sup>	BDL		BDL		1 µg/m <sup>3</sup>
8.	As, ng/m <sup>3</sup>	BDL		BDL		6ng/m <sup>3</sup>
9.	Ni, ng/m <sup>3</sup>	BDL		BDL		20ng/m <sup>3</sup>
10.	Benzene, µg/m <sup>3</sup>	BDL		BDL		5 µg/m <sup>3</sup>
11.	Benzoapyreneng/m <sup>3</sup>	BDL		BDL		1ng/m <sup>3</sup>
12.	Ozone, µg/m <sup>3</sup>	15.36		13.54		180 µg/m <sup>3</sup>

Sr. Chemist

Aditi R&D Services



Technical Manager

Aditi R&D Services, Sindri



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09431512608

Ref. No.: - ARDS/23-24/974

Date: 25.08.2023

## TEST REPORT OF AMBIENT AIR QUALITY

- Name of the industry : TASRA COAL MINING PROJECT, COLLIERIES DIVISION,  
STEEL AUTHORITY OF INDIA LTD.  
CHASNALLA - 828135, DIST. - DHANBAD
- Work Order Ref. NO.: :CD/CC/WO/2023-24/10 Dated- 25.05.2023
- Date of Sample Collection : 16.08.2023 - 18.08.2023
- Date of Testing : 19.08.2023 - 22.08.2023
- Test Procedure : As per IS-5182
- Sampling Location : G.M. OFFICE CHASNALLA

### TEST RESULTS

	Avg. Ambient Temperature	Average Relative Humidity (%)	Sample 1	Sample 2	NAAQ - CPCB STANDARD
	32	72	16.08.2023 - 17.08.2023	17.08.2023 - 18.08.2023	
Sl No.	Particulars		Value	Value	
1.	Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>		74.19	70.41	100 µg/m <sup>3</sup>
2.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>		38.94	36.49	60 µg/m <sup>3</sup>
3.	SO <sub>2</sub> , µg/m <sup>3</sup>		27.92	25.29	80 µg/m <sup>3</sup>
4.	NO <sub>2</sub> , µg/m <sup>3</sup>		20.71	18.30	80 µg/m <sup>3</sup>
5.	NH <sub>3</sub> , µg/m <sup>3</sup>		16.87	14.57	400 µg/m <sup>3</sup>
6.	CO, mg/m <sup>3</sup>		0.82	0.68	4 mg/m <sup>3</sup>
7.	Pb, µg/m <sup>3</sup>		BDL	BDL	1 µg/m <sup>3</sup>
8.	As, ng/m <sup>3</sup>		BDL	BDL	6ng/m <sup>3</sup>
9.	Ni, ng/m <sup>3</sup>		BDL	BDL	20ng/m <sup>3</sup>
10.	Benzene, µg/m <sup>3</sup>		BDL	BDL	5 µg/m <sup>3</sup>
11.	Benzoapyreneng/m <sup>3</sup>		BDL	BDL	1ng/m <sup>3</sup>
12.	Ozone, µg/m <sup>3</sup>		12.82	10.52	180 µg/m <sup>3</sup>

Sr. Chemist  
Aditi R&D Services



Technical Manager  
Aditi R&D Services, Sindri



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## TEST REPORT OF NOISE (AMBIENT) LEVEL MONITORING

Ref. No. & Date					NAME AND ADDRESS OF THE CLIENT				
ARDS/23-24/975    Date: 25.08.2023					TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD. CHASNALLA – 828135, DIST. - DHANBAD				
Date of Monitoring									
16.08.2023 TO   17.08.2023					Avg. Ambient Temperature (°C)	Average Humidity (%)	Weather Condition	Status of the plant	
Work Order   CD/CC/WO/2023-24/10 Dated- 25.05.2023					32	72	Cloudy	Running	
MONITORING RESULTS									
Sl. No	Place of Monitoring	Day Time  (6 AM to 10 PM) Avg. dB(A)			Night Time  (10 PM to 6 AM) Avg. dB(A)			Noise level (Ambient standard) for Industrial Area as per CPCB Noise Pollution (Regulation and Control) (Amendment) Rules , 2000 notified vide S.O. 1046(E) Dt. 22.11.2020 Limit in dB(A) Leq	
								Day Time	Night Time
LOCATION		MAX	MIN	AVG. dB(A) Leq	MAX	MIN	AVERAGE dB(A) Leq	Industrial Area	Industrial Area
CORE ZONE									
1.	Tasra (Near Mine Site)	73.76	69.86	72.23	63.64	59.80	62.13	75	70
2.	Weigh Bridge	70.84	68.95	70.00	60.26	56.89	58.89		
BUFFER ZONE								Residential Area	Residential Area
1.	KD Colony Rohrabandh	49.90	43.76	47.84	39.30	36.92	38.27	55	45
2.	Near BIT Main Gate.	52.53	47.72	50.76	42.98	40.15	41.79		
3.	GM OFFICE, Chasnala	47.68	42.53	45.83	40.33	38.65	39.57		
4.	NEAR ARYA SAMAJ	50.94	48.49	49.89	40.16	38.60	39.45		

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## TEST REPORT OF DRINKING WATER FOR THE MONTH OF AUGUST 2023

Ref. No. & Date		NAME AND ADDRESS OF THE CLIENT		
ARDS/23-24/976 Dt. 25.08.2023		TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD. CHASNALLA – 828135, DIST. - DHANBAD		
P.O. NO. & Date		CD/CC/WO/2023-24/10 Dated- 25.05.2023		
Season		MONSOON		
Location of Sample		KD COLONY ROHARABAND (BUFFER ZONE)		
Sample Description		GROUND WATER		
		Analysis Started on		18.08.2023
Date of Sample Collection		17.08.2023	Analysis completed on	24.08.2023
Test Procedure		IS:3025		
TEST RESULT				
Sl. No.	Parameters	Value	IS: 10500: 2012	
			Accepted Limit	Permissible Limit
1.	Colour Hazen units	2	5	15
2.	Odour	Agreeable	Agreeable	Agreeable
3.	Taste	Agreeable	Agreeable	Agreeable
4.	Turbidity NTU Max	NIL	1	5
5.	Total Dissolved Solids mg/l, Max	645	500	2000
6.	pH Value	7.5	6.5 to 8.5	6.5 to 8.5
7.	Total Hardness (as CaCO <sub>3</sub> ) mg/l, Max	336	200	600
8.	Calcium (as Ca) mg/l, Max	99.2	75	200
9.	Magnesium (as Mg)mg/l, Max	21.1	30	100
10.	Copper (as Cu) mg/l, Max	0.003	0.05	1.5
11.	Iron (as Fe) mg/l Max	0.04	0.3	NR
12.	Manganese (as Mn) mg/l, Max	<0.001	0.1	0.3
13.	Chlorides (as Cl) mg/l, Max	58	250	1000
14.	Sulphate (as SO <sub>4</sub> ) mg/l Max	61.5	200	400
15.	Nitrate mg/l, (as NO <sub>3</sub> )	8.8	45	NR
16.	Fluoride (as F) mg/l	0.78	1.0	1.5
17.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) mg/l, Max	-	0.001	0.002
18.	Mercury (as Hg)mg/l, Max	-	0.001	NR
19.	Cadmium (as Cd) mg/l, Max	-	0.01	NR
20.	Selenium (as Se mg/l, Max	-	0.01	NR
21.	Arsenic (as As) mg/l, Max	<0.001	0.01	0.05
22.	Cyanide (as Cn) mg/l, Max	<0.001	0.05	NR
23.	Lead (As Pb) mg/l Max	<0.001	0.05	NR
24.	Zinc (as Zn) mg/l Max	0.14	5.0	15
25.	Arionic detergents (as MBAS), mg/l, Max	-	0.2	1.0
26.	Chromium (as Cr <sup>6+</sup> ) mg/l	0.006	0.05	NR
27.	Mineral Oil mg/l, Max	-	0.01	NR
28.	Residual, free chlorine mg/l, Min	NIL	0.2	1.0

Remarks: All the parameters of samples tested are within the permissible limit of Drinking Water Standard IS - 10500 : 2012

NR- No Relaxation

Sr. Chemist  
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## TEST REPORT OF DRINKING WATER FOR THE MONTH OF AUGUST 2023

Ref. No. & Date	NAME AND ADDRESS OF THE CLIENT		
ARDS/23-24/977 Dt. 25.08.2023	TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD. CHASNALLA - 828135, DIST. - DHANBAD		
P.O. NO. & Date	CD/CC/WO/2023-24/10 Dated- 25.05.2023		
Season	MONSOON		
Location of Sample	DUBEY COLONY TASRA (CORE ZONE)		
Sample Description	Ground Water		
		Analysis Started on	18.08.2023
Date of Sample Collection	17.08.2023	Analysis completed on	24.08.2023
Test Procedure	IS:3025		

## TEST RESULT

Sl. No.	Parameters	Value	IS: 10500: 2012	
			Accepted Limit	Permissible Limit
1.	Colour Hazen units	1	5	15
2.	Odour	Agreeable	Agreeable	Agreeable
3.	Taste	Agreeable	Agreeable	Agreeable
4.	Turbidity NTU Max	NIL	1	5
5.	Total Dissolved Solids mg/l, Max	870	500	2000
6.	pH Value	6.9	6.5 to 8.5	6.5 to 8.5
7.	Total Hardness (as CaCO <sub>3</sub> ) mg/l, Max	484	200	600
8.	Calcium (as Ca) mg/l, Max	147.2	75	200
9.	Magnesium (as Mg) mg/l, Max	27.8	30	100
10.	Copper (as Cu) mg/l, Max	0.002	0.05	1.5
11.	Iron (as Fe) mg/l Max	0.14	0.3	NR
12.	Manganese (as Mn) mg/l, Max	<0.001	0.1	0.3
13.	Chlorides (as Cl) mg/l, Max	104	250	1000
14.	Sulphate (as SO <sub>4</sub> ) mg/l Max	68.8	200	400
15.	Nitrate mg/l, (as NO <sub>3</sub> )	8.9	45	NR
16.	Fluoride (as F) mg/l	0.88	1.0	1.5
17.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) mg/l, Max	-	0.001	0.002
18.	Mercury (as Hg) mg/l, Max	-	0.001	NR
19.	Cadmium (as Cd) mg/l, Max	-	0.01	NR
20.	Selenium (as Se) mg/l, Max	-	0.01	NR
21.	Arsenic (as As) mg/l, Max	<0.001	0.01	0.05
22.	Cyanide (as Cn) mg/l, Max	<0.001	0.05	NR
23.	Lead (As Pb) mg/l Max	0.007	0.05	NR
24.	Zinc (as Zn) mg/l Max	0.012	5.0	15
25.	Arionic detergents (as MBAS), mg/l, Max	-	0.2	1.0
26.	Chromium (as Cr <sup>6+</sup> ) mg/l	0.009	0.05	NR
27.	Mineral Oil mg/l, Max	-	0.01	NR
28.	Residual, free chlorine mg/l, Min	NIL	0.2	1.0

Remarks: All the parameters of samples tested are within the permissible limit of Drinking Water  
Standard IS - 10500 : 2012

NR- No Relaxation

Sr. Chemist  
Aditi R&D Services



Technical Manager  
Aditi R&D Services, Sindri



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## TEST REPORT OF DRINKING WATER FOR THE MONTH OF AUGUST 2023

Ref. No. & Date		NAME AND ADDRESS OF THE CLIENT		
ARDS/23-24/978 Dt. 25.08.2023		TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD. CHASNALLA – 828135, DIST. - DHANBAD		
P.O. NO. & Date		CD/CC/WO/2023-24/10 Dated- 25.05.2023		
Season		MONSOON		
Location of Sample		ARYA SAMAJ, SINDRI (BUFFER ZONE)		
Sample Description		Ground Water		
		Analysis Started on		18.08.2023
Date of Sample Collection		17.08.2023	Analysis completed on	24.08.2023
Test Procedure		IS:3025		
TEST RESULT				
Sl. No.	Parameters	Value	IS: 10500: 2012	
			Accepted Limit	Permissible Limit
1.	Colour Hazen units	1	5	15
2.	Odour	Agreeable	Agreeable	Agreeable
3.	Taste	Agreeable	Agreeable	Agreeable
4.	Turbidity NTU Max	1	1	5
5.	Total Dissolved Solids mg/l, Max	856	500	2000
6.	pH Value	7.0	6.5 to 8.5	6.5 to 8.5
7.	Total Hardness (as CaCO <sub>3</sub> ) mg/l, Max	532	200	600
8.	Calcium (as Ca) mg/l, Max	153.6	75	200
9.	Magnesium (as Mg)mg/l, Max	35.5	30	100
10.	Copper (as Cu) mg/l, Max	0.003	0.05	1.5
11.	Iron (as Fe) mg/l Max	0.12	0.3	NR
12.	Manganese (as Mn) mg/l, Max	0.01	0.1	0.3
13.	Chlorides (as Cl) mg/l, Max	83.7	250	1000
14.	Sulphate (as SO <sub>4</sub> ) mg/l Max	70	200	400
15.	Nitrate mg/l, (as NO <sub>3</sub> )	4.8	45	NR
16.	Fluoride (as F) mg/l	0.79	1.0	1.5
17.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) mg/l, Max	-	0.001	0.002
18.	Mercury (as Hg)mg/l, Max	-	0.001	NR
19.	Cadmium (as Cd) mg/l, Max	-	0.01	NR
20.	Selenium (as Se mg/l, Max	-	0.01	NR
21.	Arsenic (as As) mg/l, Max	<0.001	0.01	0.05
22.	Cyanide (as Cn) mg/l, Max	<0.001	0.05	NR
23.	Lead (As Pb) mg/l Max	0.015	0.05	NR
24.	Zinc (as Zn) mg/l Max	0.04	5.0	15
25.	Arionic detergents (as MBAS), mg/l, Max	-	0.2	1.0
26.	Chromium (as Cr <sup>+6</sup> ) mg/l	0.018	0.05	NR
27.	Mineral Oil mg/l, Max	-	0.01	NR
28.	Residual, free chlorine mg/l, Min	NIL	0.2	1.0

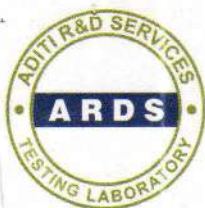
Remarks: All the parameters of samples tested are within the permissible limit of Drinking Water  
Standard IS - 10500 : 2012

NR- No Relaxation

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Technical Manager  
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09431512608

## TEST REPORT OF SURFACE WATER FOR THE MONTH OF AUGUST 2023

Ref. No. & Date	NAME AND ADDRESS OF THE CLIENT		
ARDS/23-24/979 Dt. 25.08.2023	TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD. CHASNALLA - 828135, DIST. - DHANBAD		
P.O. NO. & Date	CD/CC/WO/2023-24/10 Dated- 25.05.2023		
Season	PRE MONSOON		
Location of Sample DAMODAR RIVER DOWNSTREAM OF MINE SITE (BUFFER ZONE)		Analysis Started on	18.08.2023
Date & Time Sample Collection	17.08.2023/ 02:40 PM	Analysis completed on	24.08.2023
Test Procedure	IS:3025		

### TEST RESULT

Sl. No.	Parameters	Value	(IS :2296) Surface Water Class "C" Tolerance Limit
1.	Colour Hazen units	2	300
2.	Dissolved Oxygen, mg/l	4.8	4
3.	B.O.D. (3 days at 27°C)	1.8	3
4.	Total Dissolved Solids mg/l, Max	245	1500
5.	pH Value	7.4	6.5 - 8.5
6.	Total Hardness (as CaCO <sub>3</sub> ) mg/l, Max	132	NS
7.	Calcium (as Ca) mg/l, Max	28.8	NS
8.	Magnesium (as Mg) mg/l, Max	14.4	NS
9.	Copper (as Cu) mg/l, Max	0.003	1.5
10.	Iron (as Fe) mg/l Max	0.45	50
11.	Manganese (as Mn) mg/l, Max	<0.001	NS
12.	Chlorides (as Cl) mg/l, Max	19	600
13.	Sulphate (as SO <sub>4</sub> ) mg/l Max	41.5	400
14.	Nitrate mg/l, (as NO <sub>3</sub> )	10.1	50
15.	Fluoride (as F) mg/l	0.72	1.5
16.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) mg/l, Max	<0.001	0.005
17.	Cadmium (as Cd) mg/l, Max	<0.001	0.01
18.	Oil and grease, mg/l	BDL	0.1
19.	Arsenic (as As) mg/l, Max	<0.001	0.2
20.	Sodium (as Na) mg/l, Max	4.8	NS
21.	Lead (As Pb) mg/l Max	0.002	0.1
22.	Zinc (as Zn) mg/l Max	0.18	15
23.	Potassium as K)	1.4	NS
24.	Hexavalent Chromium (as Cr <sup>6+</sup> ) mg/l, Max	<0.001	0.05
25.	C.O.D., mg/l	47	-
26.	Total Suspended Solids , mg/l	25	-

Remarks: All the parameters of samples tested are within the permissible limit of General standard.

BDL - Below Detection Limit

NS - Not Specified

Sr. Chemist  
Aditi R&D Services



Technical Manager  
Aditi R&D Services, Sindri



# ADITI R&D SERVICES

Testing Laboratory

Recognised by Jharkhand State Pollution Control Board

AN ISO 9001:2008 and OHSAS 18001:2007 Certified Company

Plot No. - I-B-17 (P)  
Sindri, Industrial Area,  
P.O.- Domgarh, Dist.- Dhanbad  
Jharkhand - 828107  
Phone : 0326-2952377  
Mobile : 09471358492  
09431512608

## TEST REPORT OF SURFACE WATER FOR THE MONTH OF AUGUST 2023

Ref. No. & Date	NAME AND ADDRESS OF THE CLIENT		
ARDS/23-24/980 Dt. 25.08.2023	TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD. CHASNALLA – 828135, DIST. - DHANBAD		
P.O. NO. & Date	CD/CC/WO/2023-24/10 Dated- 25.05.2023		
Season	PRE MONSOON		
Location of Sample DAMODAR RIVER UPSTREAM OF MINE SITE (BUFFER ZONE)		Analysis Started on	18.08.2023
Date & Time Sample Collection	17.08.2023/ 02:40PM	Analysis completed on	24.08.2023
Test Procedure	IS:3025		

### TEST RESULT

Sl. No.	Parameters	Value	(IS :2296) Surface Water Class "C" Tolerance Limit
1.	Colour Hazen units	1	300
2.	Dissolved Oxygen, mg/l	4.6	4
3.	B.O.D. (3 days at 27°C)	2.1	3
4.	Total Dissolved Solids mg/l, Max	214	1500
5.	pH Value	7.6	6.5 – 8.5
6.	Total Hardness (as CaCO <sub>3</sub> ) mg/l, Max	136	NS
7.	Calcium (as Ca) mg/l, Max	30.4	NS
8.	Magnesium (as Mg)mg/l, Max	14.4	NS
9.	Copper (as Cu) mg/l, Max	0.003	1.5
10.	Iron (as Fe) mg/l Max	0.3	50
11.	Manganese (as Mn) mg/l, Max	<0.001	NS
12.	Chlorides (as Cl) mg/l, Max	20.5	600
13.	Sulphate (as SO <sub>4</sub> ) mg/l Max	48.6	400
14.	Nitrate mg/l, (as NO <sub>3</sub> )	9.4	50
15.	Fluoride (as F) mg/l	0.70	1.5
16.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) mg/l, Max	<0.001	0.005
17.	Cadmium (as Cd) mg/l, Max	<0.001	0.01
18.	Oil and grease, mg/l	BDL	0.1
19.	Arsenic (as As) mg/l, Max	<0.001	0.2
20.	Sodium (as Na) mg/l, Max	7.5	NS
21.	Lead (As Pb) mg/l Max	<0.001	0.1
22.	Zinc (as Zn) mg/l Max	0.16	15
23.	Potassium as K)	1.2	NS
24.	Hexavalent Chromium (as Cr <sup>6+</sup> ) mg/l, Max	<0.001	0.05
25.	C.O.D., mg/l	39	-
26.	Total Suspended Solids , mg/l	23	-

Remarks: All the parameters of samples tested are within the permissible limit of General standard.

BDL – Below Detection Limit

NS – Not Specified

Sr. Chemist  
Aditi R&D Services



Technical Manager  
Aditi R&D Services, Sindri



# ADITI R&D SERVICES

Testing Laboratory

Recognised by Jharkhand State Pollution Control Board

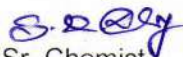
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Plot No. - I-B-17 (P)  
Sindri, Industrial Area,  
P.O. - Domgarh, Dist.- Dhanbad  
Jharkhand - 828107  
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09431512608

## TEST REPORT OF EFFLUENT WATER FOR THE MONTH OF AUGUST 2023

Ref. No. & Date		NAME AND ADDRESS OF THE CLIENT		
ARDS/23-24/981 Dt. 25.08.2023		TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD. CHASNALLA – 828135, DIST. - DHANBAD		
P.O. NO. & DATE		CD/CC/WO/2023-24/10 DATED- 25.05.2023		
SEASON		MONSOON		
Sample Description		Effluent Discharged		
Location of Sample		Pond Water TasraBasti (CORE ZONE)	Analysis Started on	18.08.2023
Date & Time Sample Collection		17.08.2023 01:40 PM	Analysis completed on	24.08.2023
Test Procedure		IS:3025		
TEST RESULT				
Sl. No.	Parameters	Unit	Value	Effluent Water IS: 2490
1.	pH value	–	6.9	5.5 to 9.0
2.	Colour,	Hazen units,	(<5)	5
3.	Odour*	-	Agreeable	Annexure-1
4.	Conductivity, $\mu\text{S}/\text{cm}$	$\mu\text{S}/\text{cm}$	650	NS
5.	Turbidity (NTU)	NTU	7.3	NS
6.	Total Dissolved Solids mg/l	mg/l	429	2100
7.	Total Suspended Solids mg/l, max,	mg/l	29	100
8.	Dissolved Oxygen (DO)	mg/l	5.4	NS
9.	Oil and grease, mg/l	mg/l	0.4	10
10.	Phenolic compounds (as $\text{C}_6\text{H}_5\text{OH}$ ),	mg/l max	-	1.0
11.	B.O.D.	mg/l	11.7	30
12.	C.O.D.	mg/l	71	250

NS – Not Specified

  
Sr. Chemist  
Aditi R&D Services



  
Technical Manager  
Aditi R&D Services, Sindri



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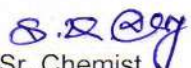
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Sindri, Industrial Area,  
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Jharkhand - 828107  
Phone : 0326-2952377  
Mobile : 09471358492  
09431512608

## TEST REPORT OF EFFLUENT WATER FOR THE MONTH OF AUGUST 2023

Ref. No. & Date		NAME AND ADDRESS OF THE CLIENT		
ARDS/23-24/982 Dt. 25.08.2023		TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD. CHASNALLA – 828135, DIST. - DHANBAD		
P.O. NO. & DATE		CD/CC/WO/2023-24/10 DATED- 25.05.2023		
SEASON		MONSOON		
Sample Description		MINE WATER		
Location of Sample		TASRA EXISTING MINE PIT, TASRA OCP (CORE ZONE)	Analysis Started on	18.08.2023
Date & Time Sample Collection		17.08.2023 02:00 PM	Analysis completed on	24.08.2023
Test Procedure		IS:3025		
TEST RESULT				
Sl. No.	Parameters	Unit	Value	Effluent Water IS: 2490
1.	pH value	–	7.2	5.5 to 9.0
2.	Colour,	Hazen units,	(<5)	5
3.	Odour*	-	Agreeable	Annexure-1
4.	Conductivity, µS/cm	µS/cm	870	NS
5.	Turbidity (NTU)	NTU	2.8	NS
6.	Total Dissolved Solids mg/l	mg/l	560	2100
7.	Total Suspended Solids mg/l, max,	mg/l	24	100
8.	Dissolved Oxygen (DO)	mg/l	6.1	NS
9.	Oil and grease, mg/l	mg/l	BDL	10
10.	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH),	mg/l max	-	1.0
11.	B.O.D.	mg/l	10.8	30
12.	C.O.D.	mg/l	78	250

NS - Not Specified

  
Sr. Chemist  
Aditi R&D Services



  
Technical Manager  
Aditi R&D Services, Sindri



# ADITI R&D SERVICES

Testing Laboratory

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ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified

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Mobile: 09471358492, 09431512608

Ref. No.: - ARDS/23-24/1529

Date: 05/12/2023

## TEST REPORT OF AMBIENT AIR QUALITY

- Name of the industry : TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD.  
CHASNALLA - 828135, DIST. - DHANBAD
- Work Order Ref. NO.: : CD/CC/VO/2023-24/10 Dated- 25.05.2023
- Date of Sample Collection : 27/11/2023 - 28/11/2023
- Date of Testing : 29/11/2023 - 30/11/2023
- Test Procedure : As per IS - 5182
- Sampling Location : Near Check Post Tasra Project.  
(Core Zone)

### TEST RESULTS

SI No.	Particulars	Avg. Ambient Temperature	Average Relative Humidity (%)	Sample 1	Sample 2	NAAQ - CPCB STANDARD
		29	49	27/11/2023	28/11/2023	
		Value		Value		
1.	Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>	85.62		81.31		100 µg/m <sup>3</sup>
2.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>	50.37		46.78		60 µg/m <sup>3</sup>
3.	SO <sub>2</sub> , µg/m <sup>3</sup>	35.82		34.28		80 µg/m <sup>3</sup>
4.	NO <sub>2</sub> , µg/m <sup>3</sup>	22.48		20.80		80 µg/m <sup>3</sup>
5.	NH <sub>3</sub> , µg/m <sup>3</sup>	15.18		16.85		400 µg/m <sup>3</sup>
6.	CO, mg/m <sup>3</sup>	0.89		0.73		4 mg/m <sup>3</sup>
7.	Pb, µg/m <sup>3</sup>	BDL		0.002		1 µg/m <sup>3</sup>
8.	As, ng/m <sup>3</sup>	BDL		BDL		6ng/m <sup>3</sup>
9.	Ni, ng/m <sup>3</sup>	BDL		BDL		20ng/m <sup>3</sup>
10.	Benzene, µg/m <sup>3</sup>	BDL		BDL		5 µg/m <sup>3</sup>
11.	Benzoapyreneng/m <sup>3</sup>	BDL		BDL		1ng/m <sup>3</sup>
12.	Ozone, µg/m <sup>3</sup>	15.36		11.62		180 µg/m <sup>3</sup>

Sr. Chemist  
Aditi R&D Services



Technical Manager  
Aditi R&D Services, Sindri

### Statements :

- The test report refers only to the particular item(s) submitted for testing.
- The test results reported in this report are valid at the time of and under the stated condition of measurement.
- This particular test report cannot be reproduced except in full without prior permission of Quality Manager of the laboratory.



# ADITI R&D SERVICES

Testing Laboratory

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Plot No. - I-B-17 (P)  
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Phone: 0326-2952377 (O)  
Mobile: 09471358492, 09431512608

Ref. No.: - ARDS/23-24/1530

Date: 05/12/2023

## TEST REPORT OF AMBIENT AIR QUALITY

- Name of the industry : TASRA COAL MINING PROJECT, COLLIERIES DIVISION,  
STEEL AUTHORITY OF INDIA LTD.  
CHASNALLA – 828135, DIST. - DHANBAD
- Work Order Ref. NO.: :CD/CC/WO/2023-24/10 Dated- 25.05.2023
- Date of Sample Collection : 27/11/2023 – 28/11/2023
- Date of Testing : 29/11/2023 – 30/11/2023
- Test Procedure : As per IS-5182
- Sampling Location : Near Arya Samaj, Sindri  
(Core Zone)

### TEST RESULTS

Sl No.	Particulars	Avg. Ambient Temperature	Average Relative Humidity (%)	Sample 1	Sample 2	NAAQ - CPCB STANDARD
		29	49	27/11/2023	28/11/2023	
Sl No.	Particulars	Value		Value		
1.	Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>	82.94		80.91		100 µg/m <sup>3</sup>
2.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>	47.76		45.55		60 µg/m <sup>3</sup>
3.	SO <sub>2</sub> , µg/m <sup>3</sup>	26.90		25.22		80 µg/m <sup>3</sup>
4.	NO <sub>2</sub> , µg/m <sup>3</sup>	22.87		23.52		80 µg/m <sup>3</sup>
5.	NH <sub>3</sub> , µg/m <sup>3</sup>	14.86		13.36		400 µg/m <sup>3</sup>
6.	CO, mg/m <sup>3</sup>	0.82		0.62		4 mg/m <sup>3</sup>
7.	Pb, µg/m <sup>3</sup>	0.001		BDL		1 µg/m <sup>3</sup>
8.	As, ng/m <sup>3</sup>	BDL		BDL		6ng/m <sup>3</sup>
9.	Ni, ng/m <sup>3</sup>	BDL		BDL		20ng/m <sup>3</sup>
10.	Benzene, µg/m <sup>3</sup>	BDL		BDL		5 µg/m <sup>3</sup>
11.	Benzoapyreneng/m <sup>3</sup>	BDL		BDL		1ng/m <sup>3</sup>
12.	Ozone, µg/m <sup>3</sup>	13.76		12.46		180 µg/m <sup>3</sup>

Sr. Chemist  
Aditi R&D Services



Technical Manager  
Aditi R&D Services, Sindri

### Statements :

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# ADITI R&D SERVICES

**Testing Laboratory**

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Mobile: 09471358492, 09431512608

Ref. No.: - ARDS/23-24/1531

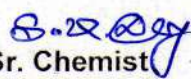
Date: 05/12/2023

## TEST REPORT OF AMBIENT AIR QUALITY


- Name of the industry : TASRA COAL MINING PROJECT, COLLIERIES DIVISION,  
STEEL AUTHORITY OF INDIA LTD.  
CHASNALLA – 828135, DIST. - DHANBAD
- Work Order Ref. NO.: :CD/CC/WO/2023-24/10 Dated- 25.05.2023
- Date of Sample Collection : 27/11/2023 – 28/11/2023
- Date of Testing : 29/11/2023 – 30/11/2023
- Test Procedure : As per IS-5182
- Sampling Location : K.D. Colony Rorabandh  
(Buffer Zone)

### TEST RESULTS

SI No.	Particulars	Avg. Ambient Temperature	Average Relative Humidity (%)	Sample 1	Sample 2	NAAQ - CPCB STANDARD
		29	49	27/11/2023	28/11/2023	
		Value		Value		
1.	Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>	68.97		66.02		100 µg/m <sup>3</sup>
2.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>	40.38		37.60		60 µg/m <sup>3</sup>
3.	SO <sub>2</sub> , µg/m <sup>3</sup>	20.71		19.58		80 µg/m <sup>3</sup>
4.	NO <sub>2</sub> , µg/m <sup>3</sup>	20.80		18.90		80 µg/m <sup>3</sup>
5.	NH <sub>3</sub> , µg/m <sup>3</sup>	16.28		14.80		400 µg/m <sup>3</sup>
6.	CO, mg/m <sup>3</sup>	0.95		0.64		4 mg/m <sup>3</sup>
7.	Pb, µg/m <sup>3</sup>	BDL		BDL		1 µg/m <sup>3</sup>
8.	As, ng/m <sup>3</sup>	BDL		BDL		6ng/m <sup>3</sup>
9.	Ni, ng/m <sup>3</sup>	BDL		BDL		20ng/m <sup>3</sup>
10.	Benzene, µg/m <sup>3</sup>	BDL		BDL		5 µg/m <sup>3</sup>
11.	Benzoapyreneng/m <sup>3</sup>	BDL		BDL		1ng/m <sup>3</sup>
12.	Ozone, µg/m <sup>3</sup>	15.82		14.52		180 µg/m <sup>3</sup>

  
Sr. Chemist  
Aditi R&D Services



  
Technical Manager  
Aditi R&D Services, Sindri

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Ref. No.: ARDS/23-24/1532

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Phone: 0326-2952377 (O)  
Mobile: 09471358492, 09431512608

Date: 05/12/2023

## TEST REPORT OF AMBIENT AIR QUALITY

- Name of the industry : TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD.  
CHASNALLA - 828135, DIST. - DHANBAD
- Work Order Ref. NO.: : CD/CC/WO/2023-24/10 Dated- 25.05.2023
- Date of Sample Collection : 27/11/2023 - 28/11/2023
- Date of Testing : 29/11/2023 - 30/11/2023
- Test Procedure : As per IS-5182
- Sampling Location : G.M. OFFICE CHASNALLA

### TEST RESULTS

SI No.	Particulars	Avg. Ambient Temperature	Average Relative Humidity (%)	Sample 1	Sample 2	NAAQ - CPCB STANDARD
		29	49	27/11/2023	28/11/2023	
		Value		Value	Value	
1.	Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>	69.22		65.43		100 µg/m <sup>3</sup>
2.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>	38.54		36.25		60 µg/m <sup>3</sup>
3.	SO <sub>2</sub> , µg/m <sup>3</sup>	21.15		20.18		80 µg/m <sup>3</sup>
4.	NO <sub>2</sub> , µg/m <sup>3</sup>	20.15		19.90		80 µg/m <sup>3</sup>
5.	NH <sub>3</sub> , µg/m <sup>3</sup>	17.25		14.52		400 µg/m <sup>3</sup>
6.	CO, mg/m <sup>3</sup>	0.87		0.60		4 mg/m <sup>3</sup>
7.	Pb, µg/m <sup>3</sup>	BDL		BDL		1 µg/m <sup>3</sup>
8.	As, ng/m <sup>3</sup>	BDL		BDL		6ng/m <sup>3</sup>
9.	Ni, ng/m <sup>3</sup>	BDL		BDL		20ng/m <sup>3</sup>
10.	Benzene, µg/m <sup>3</sup>	BDL		BDL		5 µg/m <sup>3</sup>
11.	Benzoapyreneng/m <sup>3</sup>	BDL		BDL		1ng/m <sup>3</sup>
12.	Ozone, µg/m <sup>3</sup>	11.95		10.28		180 µg/m <sup>3</sup>

*B. D. Roy*  
Sr. Chemist  
Aditi R&D Services



*[Signature]*  
Technical Manager  
Aditi R&D Services, Sindri

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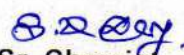
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Plot No. - I-B-17 (P)  
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## TEST REPORT OF NOISE (AMBIENT) LEVEL MONITORING

Ref. No. & Date				NAME AND ADDRESS OF THE CLIENT							
ARDS/23-24/1533 Date: 05/12/2023				TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD. CHASNALLA – 828135, DIST. - DHANBAD							
Date of Monitoring											
27/11/2023 TO 28/11/2023				Avg. Ambient Temperature (°C)		Average Humidity (%)		Weather Condition		Status of the plant	
Work Order CD/CC/WO/2023-24/10 Dated- 25.05.2023				29		49		Clear		Running	
MONITORING RESULTS											
Sl. No	Place of Monitoring	Day Time (6 AM to 10 PM) Avg. dB(A)			Night Time (10 PM to 6 AM) Avg. dB(A)			Noise level (Ambient standard) for Industrial Area as per CPCB Noise Pollution (Regulation and Control) (Amendment) Rules, 2000 notified vide S.O. 1046(E) Dt. 22.11.2020 Limit in dB(A) Leq			
LOCATION		MAX	MIN	AVG. dB(A) Leq	MAX	MIN	AVERAGE dB(A) Leq	Day Time	Night Time		
CORE ZONE								Industrial Area	Industrial Area		
1.	Tasra (Near Mine Site)	72.66	69.22	71.27	64.82	57.60	62.56	75	70		
2.	Weigh Bridge	71.80	67.90	70.27	61.28	57.25	59.72				
BUFFER ZONE								Residential Area	Residential Area		
1.	KD Colony Rohrabandh	47.82	42.70	45.97	39.85	35.80	38.28	55	45		
2.	Near BIT Main Gate.	51.60	45.70	49.58	43.18	39.70	41.78				
3.	GM OFFICE, Chasnala	46.62	44.50	45.69	41.35	37.18	39.75				
4.	NEAR ARYA SAMAJ	52.80	42.15	50.15	42.90	38.18	41.15				

  
Sr. Chemist  
Aditi R&D Services



  
Technical Manager  
Aditi R&D Services, Sindri

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## TEST REPORT OF DRINKING WATER FOR THE MONTH OF NOVEMBER 2023

Ref. No. & Date	NAME AND ADDRESS OF THE CLIENT		
ARDS/23-24/1534 Dt. 05/12/2023	TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD. CHASNALLA - 828135, DIST. - DHANBAD		
P.O. NO. & Date	CD/CC/WO/2023-24/10 Dated- 25.05.2023		
Season	POST MONSOON		
Location of Sample	KD COLONY ROHARABAND (BUFFER ZONE)		
Sample Description	GROUND WATER		
Analysis Started on			29/11/2023
Date of Sample Collection	28/11/2023 / 12:25 PM	Analysis completed on	04/12/2023
Test Procedure	IS:3025		

## TEST RESULT

Sl. No.	Parameters	Value	IS: 10500: 2012	
			Accepted Limit	Permissible Limit
1.	Colour Hazen units	1	5	15
2.	Odour	Agreeable	Agreeable	Agreeable
3.	Taste	Agreeable	Agreeable	Agreeable
4.	Turbidity NTU Max	NIL	1	5
5.	Total Dissolved Solids mg/l, Max	656	500	2000
6.	pH Value	6.9	6.5 to 8.5	6.5 to 8.5
7.	Total Hardness (as CaCO <sub>3</sub> ) mg/l, Max	361	200	600
8.	Calcium (as Ca) mg/l, Max	104.2	75	200
9.	Magnesium (as Mg) mg/l, Max	24.2	30	100
10.	Copper (as Cu) mg/l, Max	0.006	0.05	1.5
11.	Iron (as Fe) mg/l Max	0.2	0.3	NR
12.	Manganese (as Mn) mg/l, Max	<0.001	0.1	0.3
13.	Chlorides (as Cl) mg/l, Max	63.2	250	1000
14.	Sulphate (as SO <sub>4</sub> ) mg/l Max	80.8	200	400
15.	Nitrate mg/l, (as NO <sub>3</sub> )	7.4	45	NR
16.	Fluoride (as F) mg/l	0.62	1.0	1.5
17.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) mg/l, Max	-	0.001	0.002
18.	Mercury (as Hg) mg/l, Max	-	0.001	NR
19.	Cadmium (as Cd) mg/l, Max	-	0.01	NR
20.	Selenium (as Se mg/l, Max	-	0.01	NR
21.	Arsenic (as As) mg/l, Max	<0.001	0.01	0.05
22.	Cyanide (as Cn) mg/l, Max	<0.001	0.05	NR
23.	Lead (As Pb) mg/l Max	<0.001	0.05	NR
24.	Zinc (as Zn) mg/l Max	0.24	5.0	15
25.	Arionic detergents (as MBAS), mg/l, Max	-	0.2	1.0
26.	Chromium (as Cr <sup>+6</sup> ) mg/l	0.009	0.05	NR
27.	Mineral Oil mg/l, Max	-	0.01	NR
28.	Residual, free chlorine mg/l, Min	NIL	0.2	1.0

Remarks: All the parameters of samples tested are within the permissible limit of Drinking Water Standard IS - 10500 : 2012, NR- No Relaxation

Anandita  
Sr. Chemist  
Aditi R&D Services



Technical Manager  
Aditi R&D Services, Sindri

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## TEST REPORT OF DRINKING WATER FOR THE MONTH OF NOVEMBER 2023

Plot No. - I-B-17 (P)  
Sindri, Industrial Area,  
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Mobile: 09471358492, 09431512608

Ref. No. & Date		NAME AND ADDRESS OF THE CLIENT		
ARDS/23-24/1535 Dt. 05/12/2023		TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD. CHASNALLA - 828135, DIST. - DHANBAD		
P.O. NO. & Date		CD/CC/WO/2023-24/10 Dated- 25.05.2023		
Season		POST MONSOON		
Location of Sample		DUBEY COLONY TASRA (CORE ZONE)		
Sample Description		Ground Water		
		Analysis Started on 29/11/2023		
Date of Sample Collection		27/11/2023 / 01:05 PM	Analysis completed on 04/12/2023	
Test Procedure		IS:3025		
TEST RESULT				
Sl. No.	Parameters	Value	IS: 10500: 2012	
			Accepted Limit	Permissible Limit
1.	Colour Hazen units	1	5	15
2.	Odour	Agreeable	Agreeable	Agreeable
3.	Taste	Agreeable	Agreeable	Agreeable
4.	Turbidity NTU Max	1	1	5
5.	Total Dissolved Solids mg/l, Max	916	500	2000
6.	pH Value	7.1	6.5 to 8.5	6.5 to 8.5
7.	Total Hardness (as CaCO <sub>3</sub> ) mg/l, Max	470.4	200	600
8.	Calcium (as Ca) mg/l, Max	149.5	75	200
9.	Magnesium (as Mg) mg/l, Max	23.8	30	100
10.	Copper (as Cu) mg/l, Max	0.004	0.05	1.5
11.	Iron (as Fe) mg/l Max	0.15	0.3	NR
12.	Manganese (as Mn) mg/l, Max	<0.001	0.1	0.3
13.	Chlorides (as Cl) mg/l, Max	126.3	250	1000
14.	Sulphate (as SO <sub>4</sub> ) mg/l Max	92.6	200	400
15.	Nitrate mg/l, (as NO <sub>3</sub> )	7.7	45	NR
16.	Fluoride (as F) mg/l	0.70	1.0	1.5
17.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) mg/l, Max	-	0.001	0.002
18.	Mercury (as Hg) mg/l, Max	-	0.001	NR
19.	Cadmium (as Cd) mg/l, Max	-	0.01	NR
20.	Selenium (as Se) mg/l, Max	-	0.01	NR
21.	Arsenic (as As) mg/l, Max	<0.001	0.01	0.05
22.	Cyanide (as Cn) mg/l, Max	<0.001	0.05	NR
23.	Lead (As Pb) mg/l Max	0.002	0.05	NR
24.	Zinc (as Zn) mg/l Max	0.28	5.0	15
25.	Arionic detergents (as MBAS), mg/l, Max	-	0.2	1.0
26.	Chromium (as Cr <sup>6+</sup> ) mg/l	0.001	0.05	NR
27.	Mineral Oil mg/l, Max	-	0.01	NR
28.	Residual, free chlorine mg/l, Min	NIL	0.2	1.0

Remarks: All the parameters of samples tested are within the permissible limit of Drinking Water Standard IS - 10500 : 2012, NR- No Relaxation

Anandita  
Sr. Chemist  
Aditi R&D Services



Technical Manager  
Aditi R&D Services, Sindri

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## TEST REPORT OF DRINKING WATER FOR THE MONTH OF NOVEMBER 2023

Ref. No. & Date	NAME AND ADDRESS OF THE CLIENT		
ARDS/23-24/1536 Dt. 05/12/2023	TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD. CHASNALLA - 828135, DIST. - DHANBAD		
P.O. NO. & Date	CD/CC/WO/2023-24/10 Dated- 25.05.2023		
Season	POST MONSOON		
Location of Sample	ARYA SAMAJ, SINDRI (BUFFER ZONE)		
Sample Description	Ground Water		
		Analysis Started on	29/11/2023
Date of Sample Collection	27/11/2023 / 01:08 PM	Analysis completed on	04/12/2023
Test Procedure	IS:3025		

### TEST RESULT

Sl. No.	Parameters	Value	IS: 10500: 2012	
			Accepted Limit	Permissible Limit
1.	Colour Hazen units	1	5	15
2.	Odour	Agreeable	Agreeable	Agreeable
3.	Taste	Agreeable	Agreeable	Agreeable
4.	Turbidity NTU Max	NIL	1	5
5.	Total Dissolved Solids mg/l, Max	930	500	2000
6.	pH Value	7.2	6.5 to 8.5	6.5 to 8.5
7.	Total Hardness (as CaCO <sub>3</sub> ) mg/l, Max	546	200	600
8.	Calcium (as Ca) mg/l, Max	166.3	75	200
9.	Magnesium (as Mg) mg/l, Max	31.25	30	100
10.	Copper (as Cu) mg/l, Max	0.002	0.05	1.5
11.	Iron (as Fe) mg/l Max	0.09	0.3	NR
12.	Manganese (as Mn) mg/l, Max	0.02	0.1	0.3
13.	Chlorides (as Cl) mg/l, Max	109.6	250	1000
14.	Sulphate (as SO <sub>4</sub> ) mg/l Max	74.6	200	400
15.	Nitrate mg/l, (as NO <sub>3</sub> )	3.2	45	NR
16.	Fluoride (as F) mg/l	0.68	1.0	1.5
17.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) mg/l, Max	-	0.001	0.002
18.	Mercury (as Hg) mg/l, Max	-	0.001	NR
19.	Cadmium (as Cd) mg/l, Max	-	0.01	NR
20.	Selenium (as Se) mg/l, Max	-	0.01	NR
21.	Arsenic (as As) mg/l, Max	<0.001	0.01	0.05
22.	Cyanide (as Cn) mg/l, Max	<0.001	0.05	NR
23.	Lead (As Pb) mg/l Max	0.004	0.05	NR
24.	Zinc (as Zn) mg/l Max	0.3	5.0	15
25.	Arionic detergents (as MBAS), mg/l, Max	-	0.2	1.0
26.	Chromium (as Cr <sup>6+</sup> ) mg/l	0.01	0.05	NR
27.	Mineral Oil mg/l, Max	-	0.01	NR
28.	Residual, free chlorine mg/l, Min	NIL	0.2	1.0

Remarks: All the parameters of samples tested are within the permissible limit of Drinking Water Standard IS - 10500 : 2012, NR- No Relaxation

Anandita  
Sr. Chemist  
Aditi R&D Services



Technical Manager  
Aditi R&D Services, Sindri

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## TEST REPORT OF SURFACE WATER FOR THE MONTH OF NOVEMBER 2023

Ref. No. & Date	NAME AND ADDRESS OF THE CLIENT		
ARDS/23-24/1537 Dt. 05/12/2023	TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD. CHASNALLA - 828135, DIST. - DHANBAD		
P.O. NO. & Date	CD/CC/WO/2023-24/10 Dated- 25.05.2023		
Season	POST MONSOON		
Location of Sample DAMODAR RIVER DOWNSTREAM OF MINE SITE (BUFFER ZONE)		Analysis Started on	29/11/2023
Date & Time Sample Collection	28/11/2023/ 03:30 PM	Analysis completed on	04/12/2023
Test Procedure	IS:3025		

### TEST RESULT

Sl. No.	Parameters	Value	(IS :2296) Surface Water Class "C" Tolerance Limit
1.	Colour Hazen units	1	300
2.	Dissolved Oxygen, mg/l	6.2	4
3.	B.O.D. (3 days at 27°C)	0.8	3
4.	Total Dissolved Solids mg/l, Max	312	1500
5.	pH Value	7.7	6.5 - 8.5
6.	Total Hardness (as CaCO <sub>3</sub> ) mg/l, Max	168	NS
7.	Calcium (as Ca) mg/l, Max	42	NS
8.	Magnesium (as Mg) mg/l, Max	15	NS
9.	Copper (as Cu) mg/l, Max	0.002	1.5
10.	Iron (as Fe) mg/l Max	0.34	50
11.	Manganese (as Mn) mg/l, Max	<0.001	NS
12.	Chlorides (as Cl) mg/l, Max	18.6	600
13.	Sulphate (as SO <sub>4</sub> ) mg/l Max	59.5	400
14.	Nitrate mg/l, (as NO <sub>3</sub> )	9.8	50
15.	Fluoride (as F) mg/l	0.68	1.5
16.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) mg/l, Max	<0.001	0.005
17.	Cadmium (as Cd) mg/l, Max	<0.001	0.01
18.	Oil and grease, mg/l	BDL	0.1
19.	Arsenic (as As) mg/l, Max	<0.001	0.2
20.	Sodium (as Na) mg/l, Max	5.2	NS
21.	Lead (As Pb) mg/l Max	0.004	0.1
22.	Zinc (as Zn) mg/l Max	0.028	15
23.	Potassium as K)	1.7	NS
24.	Hexavalent Chromium (as Cr <sup>6+</sup> ) mg/l, Max	<0.001	0.05
25.	C.O.D., mg/l	82	-
26.	Total Suspended Solids, mg/l	30	-

Remarks: All the parameters of samples tested are within the permissible limit of General standard. BDL - Below Detection Limit, NS - Not Specified

Anandita  
Sr. Chemist  
Aditi R&D Services



Technical Manager  
Aditi R&D Services, Sindri

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## TEST REPORT OF SURFACE WATER FOR THE MONTH OF NOVEMBER 2023

Ref. No. & Date <b>ARDS/23-24/1538</b> <b>Dt. 05/12/2023</b>	NAME AND ADDRESS OF THE CLIENT <b>TASRA COAL MINING PROJECT, COLLIERIES DIVISION,</b> <b>STEEL AUTHORITY OF INDIA LTD.</b> <b>CHASNALLA – 828135, DIST. - DHANBAD</b>
P.O. NO. & Date	<b>CD/CC/WO/2023-24/10 Dated- 25.05.2023</b>
Season	<b>POST MONSOON</b>
Location of Sample <b>DAMODAR RIVER UPSTREAM OF MINE SITE (BUFFER ZONE)</b>	Analysis Started on <b>29/11/2023</b>
Date & Time Sample Collection <b>28/11/2023/ 03:20 PM</b>	Analysis completed on <b>04/12/2023</b>
Test Procedure	<b>IS:3025</b>

### TEST RESULT

Sl. No.	Parameters	Value	(IS :2296) Surface Water Class "C" Tolerance Limit
1.	Colour Hazen units	1	300
2.	Dissolved Oxygen, mg/l	6.0	4
3.	B.O.D. (3 days at 27°C)	0.7	3
4.	Total Dissolved Solids mg/l, Max	306	1500
5.	pH Value	7.5	6.5 – 8.5
6.	Total Hardness (as CaCO <sub>3</sub> ) mg/l, Max	180.6	NS
7.	Calcium (as Ca) mg/l, Max	43.7	NS
8.	Magnesium (as Mg)mg/l, Max	17.2	NS
9.	Copper (as Cu) mg/l, Max	0.002	1.5
10.	Iron (as Fe) mg/l Max	0.29	50
11.	Manganese (as Mn) mg/l, Max	<0.001	NS
12.	Chlorides (as Cl) mg/l, Max	22.2	600
13.	Sulphate (as SO <sub>4</sub> ) mg/l Max	58.4	400
14.	Nitrate mg/l, (as NO <sub>3</sub> )	9.7	50
15.	Fluoride (as F) mg/l	0.66	1.5
16.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) mg/l, Max	<0.001	0.005
17.	Cadmium (as Cd) mg/l, Max	<0.001	0.01
18.	Oil and grease, mg/l	BDL	0.1
19.	Arsenic (as As) mg/l, Max	<0.001	0.2
20.	Sodium (as Na) mg/l, Max	6.2	NS
21.	Lead (As Pb) mg/l Max	<0.001	0.1
22.	Zinc (as Zn) mg/l Max	0.24	15
23.	Potassium as K)	1.4	NS
24.	Hexavalent Chromium (as Cr6 <sup>+</sup> ) mg/l, Max	<0.001	0.05
25.	C.O.D., mg/l	73	-
26.	Total Suspended Solids , mg/l	27	-

Remarks: All the parameters of samples tested are within the permissible limit of General standard. BDL – Below Detection Limit, NS – Not Specified

*Arun Kumar*  
Sr. Chemist  
Aditi R&D Services



*[Signature]*  
Technical Manager  
Aditi R&D Services, Sindri

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## TEST REPORT OF EFFLUENT WATER FOR THE MONTH OF NOVEMBER 2023

Plot No. - I-B-17 (P)  
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Ref. No. & Date		NAME AND ADDRESS OF THE CLIENT		
ARDS/23-24/1539 Dt. 05/12/2023		TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD. CHASNALLA – 828135, DIST. - DHANBAD		
P.O. NO. & DATE		CD/CC/WO/2023-24/10 DATED- 25.05.2023		
SEASON		POST MONSOON		
Sample Description		Effluent Discharged		
Location of Sample		Pond Water Tasra Basti (CORE ZONE)	Analysis Started on	29/11/2023
Date & Time Sample Collection		28/11/2023 01:10 PM	Analysis completed on	04/12/2023
Test Procedure		IS:3025		
<b>TEST RESULT</b>				
Sl. No.	Parameters	Unit	Value	Effluent Water IS: 2490
1.	pH value	–	7.5	5.5 to 9.0
2.	Colour,	Hazen units,	(<5)	5
3.	Odour*	-	Agreeable	Annexure-1
4.	Conductivity, $\mu\text{S}/\text{cm}$	$\mu\text{S}/\text{cm}$	760	NS
5.	Turbidity (NTU)	NTU	9.0	NS
6.	Total Dissolved Solids mg/l	mg/l	494	2100
7.	Total Suspended Solids mg/l, max,	mg/l	34	100
8.	Dissolved Oxygen (DO)	mg/l	5.5	NS
9.	Oil and grease, mg/l	mg/l	BDL	10
10.	Phenolic compounds (as $\text{C}_6\text{H}_5\text{OH}$ ),	mg/l max	-	1.0
11.	B.O.D.	mg/l	110	30
12.	C.O.D.	mg/l	9.2	250

BDL – Below Detection Limit

NS – Not Specified

*Anandita*  
Sr. Chemist  
Aditi R&D Services



*[Signature]*  
Technical Manager  
Aditi R&D Services, Sindri

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# ADITI R&D SERVICES

Testing Laboratory

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ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified

Plot No. - I-B-17 (P)  
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P.O. - Domgarh, Dist. - Dhanbad  
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Mobile: 09471358492, 09431512608

## TEST REPORT OF EFFLUENT WATER FOR THE MONTH OF NOVEMBER 2023

Ref. No. & Date		NAME AND ADDRESS OF THE CLIENT		
ARDS/23-24/1540 Dt. 05/12/2023		TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD. CHASNALLA – 828135, DIST. - DHANBAD		
P.O. NO. & DATE		CD/CC/WO/2023-24/10 DATED- 25.05.2023		
SEASON		POST MONSOON		
Sample Description		MINE WATER		
Location of Sample		TASRA EXISTING MINE PIT, TASRA OCP (CORE ZONE)	Analysis Started on	29/11/2023
Date & Time Sample Collection		28/11/2023 02:20 PM	Analysis completed on	04/12/2023
Test Procedure		IS:3025		
TEST RESULT				
Sl. No.	Parameters	Unit	Value	Effluent Water IS: 2490
1.	pH value	–	7.2	5.5 to 9.0
2.	Colour,	Hazen units,	(<5)	5
3.	Odour*	-	Agreeable	Annexure-1
4.	Conductivity, $\mu\text{S}/\text{cm}$	$\mu\text{S}/\text{cm}$	800	NS
5.	Turbidity (NTU)	NTU	4.0	NS
6.	Total Dissolved Solids mg/l	mg/l	520	2100
7.	Total Suspended Solids mg/l, max,	mg/l	29	100
8.	Dissolved Oxygen (DO)	mg/l	5.1	NS
9.	Oil and grease, mg/l	mg/l	BDL	10
10.	Phenolic compounds (as $\text{C}_6\text{H}_5\text{OH}$ ),	mg/l max	-	1.0
11.	B.O.D.	mg/l	7.6	30
12.	C.O.D.	mg/l	92	250

BDL – Below Detection Limit

NS – Not Specified

Anandita  
Sr. Chemist

Aditi R&D Services



Technical Manager

Aditi R&D Services, Sindri

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Mobile: 09471358492, 09431512608

Ref. No.: - ARDS/23-24/2039

Date: 02/03/2024

## TEST REPORT OF AMBIENT AIR QUALITY

- Name of the industry : TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD. CHASNALLA – 828135, DIST. – DHANBAD
- Work Order P.O. NO. & Date: 6000036592 & Date : 29.01.2024
- Date of Sample Collection: 26/02/2024 to 27/02/2024
- Date of Testing : 28/02/2024 to 01/03/2024
- Test Procedure : As per IS - 5182
- Sampling Location : TASRA (NEAR ARYA SAMAJ, SINDRI)

### TEST RESULTS

SI No.	CORE ZONE			NAAQ - CPCB STANDARD
	Avg. Ambient Temperature 24	Average Relative Humidity (%) 54	Sample Location TASRA NEAR ARYA SAMAJ, SINDRI	
Particulars			Value	
1. Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>			77.63	100 µg/m <sup>3</sup>
2. Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>			42.70	60 µg/m <sup>3</sup>
3. SO <sub>2</sub> , µg/m <sup>3</sup>			33.86	80 µg/m <sup>3</sup>
4. NO <sub>2</sub> , µg/m <sup>3</sup>			27.48	80 µg/m <sup>3</sup>
5. NH <sub>3</sub> , µg/m <sup>3</sup>			16.36	400 µg/m <sup>3</sup>
6. CO, mg/m <sup>3</sup>			0.81	4 mg/m <sup>3</sup>
7. Pb, µg/m <sup>3</sup>			B.D.L	1 µg/m <sup>3</sup>
8. As, ng/m <sup>3</sup>			BDL	6ng/m <sup>3</sup>
9. Ni, ng/m <sup>3</sup>			BDL	20ng/m <sup>3</sup>
10. Benzene, µg/m <sup>3</sup>			BDL	5 µg/m <sup>3</sup>
11. Benzoapyreneng/m <sup>3</sup>			BDL	1ng/m <sup>3</sup>
12. Ozone, µg/m <sup>3</sup>			15.30	180 µg/m <sup>3</sup>

Sr. Chemist

Aditi R&D Services



Technical Manager  
Aditi R&D Services, Sindri

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Ref. No.: - ARDS/23-24/2040

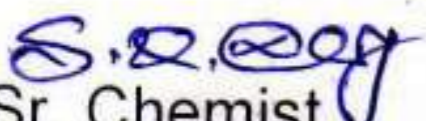
Date: 02/03/2024

## TEST REPORT OF AMBIENT AIR QUALITY

- Name of the industry : TASRA COAL MINING PROJECT, COLLIERIES DIVISION,  
STEEL AUTHORITY OF INDIA LTD.  
CHASNALLA – 828135, DIST. – DHANBAD
- Work Order P.O. NO. & Date: 6000036592 & Date : 29.01.2024
- Date of Sample Collection: 26/02/2024 TO 27/02/2024
- Date of Testing : 28/02/2024 TO 01/03/2024
- Test Procedure : As per IS - 5182
- Sampling Location : KANDRA (COAL BOARD COLONY)

### TEST RESULTS

	CORE ZONE			NAAQ - CPCB STANDARD
	Avg. Ambient Temperature	Average Relative Humidity (%)	Sample Location KANDRA (COAL BOARD COLONY)	
	24	54		
SI No.	Particulars	Value		
1.	Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>	73.52		100 µg/m <sup>3</sup>
2.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>	40.44		60 µg/m <sup>3</sup>
3.	SO <sub>2</sub> , µg/m <sup>3</sup>	30.82		80 µg/m <sup>3</sup>
4.	NO <sub>2</sub> , µg/m <sup>3</sup>	26.42		80 µg/m <sup>3</sup>
5.	NH <sub>3</sub> , µg/m <sup>3</sup>	16.83		400 µg/m <sup>3</sup>
6.	CO, mg/m <sup>3</sup>	0.77		4 mg/m <sup>3</sup>
7.	Pb, µg/m <sup>3</sup>	BDL		1 µg/m <sup>3</sup>
8.	As, ng/m <sup>3</sup>	BDL		6ng/m <sup>3</sup>
9.	Ni, ng/m <sup>3</sup>	BDL		20ng/m <sup>3</sup>
10.	Benzene, µg/m <sup>3</sup>	BDL		5 µg/m <sup>3</sup>
11.	Benzoapyreneng/m <sup>3</sup>	BDL		1ng/m <sup>3</sup>
12.	Ozone, µg/m <sup>3</sup>	16.32		180 µg/m <sup>3</sup>

  
Sr. Chemist  
Aditi R&D Services



  
Technical Manager  
Aditi R&D Services, Sindri

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Ref. No.: - ARDS/23-24/2041

Date: 02/03/2024

## TEST REPORT OF AMBIENT AIR QUALITY

- Name of the industry : TASRA COAL MINING PROJECT, COLLIERIES DIVISION,  
STEEL AUTHORITY OF INDIA LTD.  
CHASNALLA – 828135, DIST. - DHANBAD
- Work Order P.O. NO. & Date: 6000036592 & Date : 29.01.2024
- Date of Sample Collection: 26/02/2024 TO 27/02/2024
- Date of Testing : 28/02/2024 TO 01/03/2024
- Test Procedure : As per IS - 5182
- Sampling Location : CHASNALLA (G.M. OFFICE)

### TEST RESULTS

Sl No.	CORE ZONE			NAAQ - CPCB STANDARD
	Avg. Ambient Temperature	Average Relative Humidity (%)	Sample Location CHASNALLA	
	24	54		
1.	Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>	75.48	100 µg/m <sup>3</sup>	
2.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>	41.52	60 µg/m <sup>3</sup>	
3.	SO <sub>2</sub> , µg/m <sup>3</sup>	36.56	80 µg/m <sup>3</sup>	
4.	NO <sub>2</sub> , µg/m <sup>3</sup>	24.38	80 µg/m <sup>3</sup>	
5.	NH <sub>3</sub> , µg/m <sup>3</sup>	16.84	400 µg/m <sup>3</sup>	
6.	CO, mg/m <sup>3</sup>	0.84	4 mg/m <sup>3</sup>	
7.	Pb, µg/m <sup>3</sup>	BDL	1 µg/m <sup>3</sup>	
8.	As, ng/m <sup>3</sup>	BDL	6ng/m <sup>3</sup>	
9.	Ni, ng/m <sup>3</sup>	BDL	20ng/m <sup>3</sup>	
10.	Benzene, µg/m <sup>3</sup>	BDL	5 µg/m <sup>3</sup>	
11.	Benzoapyreneng/m <sup>3</sup>	BDL	1ng/m <sup>3</sup>	
12.	Ozone, µg/m <sup>3</sup>	17.48	180 µg/m <sup>3</sup>	

*Sr. Chemist*

Aditi R&D Services



*Technical Manager*  
Aditi R&D Services, Sindri

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Ref. No.: - ARDS/23-24/2042

Date: 02/03/2024

## TEST REPORT OF AMBIENT AIR QUALITY

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CHASNALLA – 828135, DIST. - DHANBAD
- Work Order P.O. NO. & Date: 6000036592 & Date : 29.01.2024
- Date of Sample Collection: 26/02/2024 TO 27/02/2024
- Date of Testing : 28/02/2024 TO 01/03/2024
- Test Procedure : As per IS - 5182
- Sampling Location : ROHRABANDH (NEAR LIC OFFICE BACK SIDE)

### TEST RESULTS

Sl No.	CORE ZONE			NAAQ - CPCB STANDARD
	Avg. Ambient Temperature	Average Relative Humidity (%)	Sample Location	
	24	54	ROHRABANDH	
Particulars	Value			
1. Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>	78.79			100 µg/m <sup>3</sup>
2. Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>	46.28			60 µg/m <sup>3</sup>
3. SO <sub>2</sub> , µg/m <sup>3</sup>	32.25			80 µg/m <sup>3</sup>
4. NO <sub>2</sub> , µg/m <sup>3</sup>	26.38			80 µg/m <sup>3</sup>
5. NH <sub>3</sub> , µg/m <sup>3</sup>	16.32			400 µg/m <sup>3</sup>
6. CO, mg/m <sup>3</sup>	0.76			4 mg/m <sup>3</sup>
7. Pb, µg/m <sup>3</sup>	BDL			1 µg/m <sup>3</sup>
8. As, ng/m <sup>3</sup>	BDL			6ng/m <sup>3</sup>
9. Ni, ng/m <sup>3</sup>	BDL			20ng/m <sup>3</sup>
10. Benzene, µg/m <sup>3</sup>	BDL			5 µg/m <sup>3</sup>
11. Benzoapyreneng/m <sup>3</sup>	BDL			1ng/m <sup>3</sup>
12. Ozone, µg/m <sup>3</sup>	16.25			180 µg/m <sup>3</sup>

Sr. Chemist  
Aditi R&D Services



Technical Manager  
Aditi R&D Services, Sindri

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Ref. No.: - ARDS/23-24/2053

Date: 05/03/2024

### TEST REPORT OF AMBIENT AIR QUALITY

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STEEL AUTHORITY OF INDIA LTD.  
CHASNALLA – 828135, DIST. - DHANBAD
- Work Order P.O. NO. & Date: 6000036592 & Date : 29.01.2024
- Date of Sample Collection: 28/02/2024 TO 29/02/2024
- Date of Testing : 01/03/2024 TO 04/03/2024
- Test Procedure : As per IS - 5182
- Sampling Location : DIGWADIH (JEALGORA GUEST HOUSE)

### TEST RESULTS

Sl No.	BUFFER ZONE			NAAQ - CPCB STANDARD
	Avg. Ambient Temperature	Average Relative Humidity (%)	Sample Location	
	24	54	DIGWADIH	
Sl No.	Particulars		Value	
1.	Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>		62.47	100 µg/m <sup>3</sup>
2.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>		35.48	60 µg/m <sup>3</sup>
3.	SO <sub>2</sub> , µg/m <sup>3</sup>		24.30	80 µg/m <sup>3</sup>
4.	NO <sub>2</sub> , µg/m <sup>3</sup>		28.45	80 µg/m <sup>3</sup>
5.	NH <sub>3</sub> , µg/m <sup>3</sup>		17.35	400 µg/m <sup>3</sup>
6.	CO, mg/m <sup>3</sup>		0.57	4 mg/m <sup>3</sup>
7.	Pb, µg/m <sup>3</sup>		BDL	1 µg/m <sup>3</sup>
8.	As, ng/m <sup>3</sup>		BDL	6ng/m <sup>3</sup>
9.	Ni, ng/m <sup>3</sup>		BDL	20ng/m <sup>3</sup>
10.	Benzene, µg/m <sup>3</sup>		BDL	5 µg/m <sup>3</sup>
11.	Benzoapyreneng/m <sup>3</sup>		BDL	1ng/m <sup>3</sup>
12.	Ozone, µg/m <sup>3</sup>		20.42	180 µg/m <sup>3</sup>

*S. R. Ray*  
Sr. Chemist

Aditi R&D Services



*S. R. Ray*  
Technical Manager  
Aditi R&D Services, Sindri

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Ref. No.: - ARDS/23-24/2054

Date: 05/03/2024

## TEST REPORT OF AMBIENT AIR QUALITY

- Name of the industry : TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD.  
CHASNALLA – 828135, DIST. - DHANBAD
- Work Order P.O. NO. & Date: 6000036592 & Date : 29.01.2024
- Date of Sample Collection: 28/02/2024 TO 29/02/2024
- Date of Testing : 01/03/2024 TO 04/03/2024
- Test Procedure : As per IS - 5182
- Sampling Location : BAGHMARA (NEAR MAA HOSPITAL)

### TEST RESULTS

Sl No.	BUFFER ZONE			NAAQ - CPCB STANDARD
	Avg. Ambient Temperature	Average Relative Humidity (%)	Sample Location	
	24	54	BAGHMARA	
Sl No.	Particulars	Value		
1.	Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>	54.29		100 µg/m <sup>3</sup>
2.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>	30.58		60 µg/m <sup>3</sup>
3.	SO <sub>2</sub> , µg/m <sup>3</sup>	22.82		80 µg/m <sup>3</sup>
4.	NO <sub>2</sub> , µg/m <sup>3</sup>	20.86		80 µg/m <sup>3</sup>
5.	NH <sub>3</sub> , µg/m <sup>3</sup>	17.48		400 µg/m <sup>3</sup>
6.	CO, mg/m <sup>3</sup>	0.52		4 mg/m <sup>3</sup>
7.	Pb, µg/m <sup>3</sup>	BDL		1 µg/m <sup>3</sup>
8.	As, ng/m <sup>3</sup>	BDL		6ng/m <sup>3</sup>
9.	Ni, ng/m <sup>3</sup>	BDL		20ng/m <sup>3</sup>
10.	Benzene, µg/m <sup>3</sup>	BDL		5 µg/m <sup>3</sup>
11.	Benzoapyreneng/m <sup>3</sup>	BDL		1ng/m <sup>3</sup>
12.	Ozone, µg/m <sup>3</sup>	21.56		180 µg/m <sup>3</sup>

Sr. Chemist

Aditi R&D Services



Technical Manager

Aditi R&D Services, Sindri

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Ref. No.: - ARDS/23-24/2055

Date: 05/03/2024

## TEST REPORT OF AMBIENT AIR QUALITY

- Name of the industry : TASRA COAL MINING PROJECT, COLLIERIES DIVISION,  
STEEL AUTHORITY OF INDIA LTD.  
CHASNALLA – 828135, DIST. - DHANBAD
- Work Order P.O. NO. & Date: 6000036592 & Date : 29.01.2024
- Date of Sample Collection: 28/02/2024 TO 29/02/2024
- Date of Testing : 01/03/2024 TO 04/03/2024
- Test Procedure : As per IS - 5182
- Sampling Location : BHOJUDIH (NEAR RAILWAY COLONY)

### TEST RESULTS

Sl No.	BUFFER ZONE			NAAQ - CPCB STANDARD
	Avg. Ambient Temperature	Average Relative Humidity (%)	Sample Location	
	24	54	BHOJUDIH	
Particulars	Value			
1. Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>	64.36			100 µg/m <sup>3</sup>
2. Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>	37.62			60 µg/m <sup>3</sup>
3. SO <sub>2</sub> , µg/m <sup>3</sup>	23.52			80 µg/m <sup>3</sup>
4. NO <sub>2</sub> , µg/m <sup>3</sup>	29.83			80 µg/m <sup>3</sup>
5. NH <sub>3</sub> , µg/m <sup>3</sup>	17.64			400 µg/m <sup>3</sup>
6. CO, mg/m <sup>3</sup>	0.64			4 mg/m <sup>3</sup>
7. Pb, µg/m <sup>3</sup>	BDL			1 µg/m <sup>3</sup>
8. As, ng/m <sup>3</sup>	BDL			6ng/m <sup>3</sup>
9. Ni, ng/m <sup>3</sup>	BDL			20ng/m <sup>3</sup>
10. Benzene, µg/m <sup>3</sup>	BDL			5 µg/m <sup>3</sup>
11. Benzoapyreneng/m <sup>3</sup>	BDL			1ng/m <sup>3</sup>
12. Ozone, µg/m <sup>3</sup>	22.59			180 µg/m <sup>3</sup>

Sr. Chemist

Aditi R&D Services



Technical Manager  
Aditi R&D Services, Sindri

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Ref. No.: - ARDS/23-24/2056

Date: 05/03/2024

## TEST REPORT OF AMBIENT AIR QUALITY

- Name of the industry : TASRA COAL MINING PROJECT, COLLIERIES DIVISION,  
STEEL AUTHORITY OF INDIA LTD.  
CHASNALLA – 828135, DIST. - DHANBAD
- Work Order P.O. NO. & Date: 6000036592 & Date : 29.01.2024
- Date of Sample Collection: 28/02/2024 TO 29/02/2024
- Date of Testing : 01/03/2024 TO 04/03/2024
- Test Procedure : As per IS - 5182
- Sampling Location : JORADIH (NEAR TEMPLE)

### TEST RESULTS

Sl No.	BUFFER ZONE			NAAQ - CPCB STANDARD
	Avg. Ambient Temperature	Average Relative Humidity (%)	Sample Location	
	24	54	JORADIH (NEAR TEMPLE)	
Sl No.	Particulars		Value	
1.	Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>		59.31	100 µg/m <sup>3</sup>
2.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>		34.57	60 µg/m <sup>3</sup>
3.	SO <sub>2</sub> , µg/m <sup>3</sup>		22.62	80 µg/m <sup>3</sup>
4.	NO <sub>2</sub> , µg/m <sup>3</sup>		30.56	80 µg/m <sup>3</sup>
5.	NH <sub>3</sub> , µg/m <sup>3</sup>		18.52	400 µg/m <sup>3</sup>
6.	CO, mg/m <sup>3</sup>		0.53	4 mg/m <sup>3</sup>
7.	Pb, µg/m <sup>3</sup>		BDL	1 µg/m <sup>3</sup>
8.	As, ng/m <sup>3</sup>		BDL	6ng/m <sup>3</sup>
9.	Ni, ng/m <sup>3</sup>		BDL	20ng/m <sup>3</sup>
10.	Benzene, µg/m <sup>3</sup>		BDL	5 µg/m <sup>3</sup>
11.	Benzoapyreneng/m <sup>3</sup>		BDL	1ng/m <sup>3</sup>
12.	Ozone, µg/m <sup>3</sup>		21.62	180 µg/m <sup>3</sup>

Sr. Chemist  
Aditi R&D Services



Technical Manager  
Aditi R&D Services, Sindri

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## TEST REPORT OF EFFLUENT WATER FOR THE MONTH OF JANUARY 2024

Ref. No. & Date	NAME AND ADDRESS OF THE CLIENT		
ARDS/23-24/1786 Dt. 23/01/2024	TASRA COLLIERY DIVISION STEEL AUTHORITY OF INDIA LTD. CHASNALA – 828135, DHANBAD		
P.O. NO. & DATE	CD/CC/WO/2023-24/10 DATED- 25.05.2023		
SEASON	POST MONSOON		
Sample Description	Mine Water		
Location of Sample	Pond Water Near Tasara Basti (CORE ZONE)	Analysis Started on	18/01/2024
Date & Time Sample Collection	17/01/2024 04:45 PM	Analysis completed on	22/01/2024
Test Procedure	IS:3025		

### TEST RESULT

Sl. No.	Parameters	Unit	Value	Effluent Water Is : 2490
1.	pH value	–	7.6	5.5 to 9.0
2.	Colour,	Hazen units,	(<5)	5
3.	Odour*	-	Agreeable	Annexure-1
4.	Conductivity, $\mu\text{S}/\text{cm}$	$\mu\text{S}/\text{cm}$	640	NS
5.	Turbidity (NTU)	NTU	2.4	NS
6.	Total Dissolved Solids mg/l	mg/l	420	2100
7.	Total Suspended Solids mg/l, max,	mg/l	36	100
8.	Dissolved Oxygen (DO)	mg/l	6.4	NS
9.	Oil and grease, mg/l	mg/l	0.8	10
10.	Phenolic compounds (as $\text{C}_6\text{H}_5\text{OH}$ ),	mg/l max	-	1.0
11.	C.O.D	(mg/l)	32.6	250
12.	B.O.D	(mg/l)	3.4	30

NS – Not Specified

Anandita  
Sr. Chemist  
Aditi R&D Services



Technical Manager  
Aditi R&D Services, Sindri

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09431512608

### TEST REPORT OF EFFLUENT WATER FOR THE MONTH OF JANUARY 2024

Ref. No. & Date		NAME AND ADDRESS OF THE CLIENT		
ARDS/23-24/1787 Dt. 23/01/2024		TASRA COLLIERY DIVISION STEEL AUTHORITY OF INDIA LTD. CHASNALA – 828135, DHANBAD		
P.O. NO. & DATE		CD/CC/WO/2023-24/10 DATED- 25.05.2023		
SEASON		POST MONSOON		
Sample Description		MINE WATER		
Location of Sample		TASRA EXISTING MINE PIT, TASRA OCP (CORE ZONE)	Analysis Started on	18/01/2024
Date & Time Sample Collection		17/01/2024 04:40 PM	Analysis completed on	22/01/2023
Test Procedure		IS:3025		
TEST RESULT				
Sl. No.	Parameters	Unit	Value	Effluent Water Is : 2490
1.	pH value	–	7.8	5.5 to 9.0
2.	Colour,	Hazen units,	(<5)	5
3.	Odour*	-	Agreeable	Annexure-1
4.	Conductivity, µS/cm	µS/cm	920	NS
5.	Turbidity (NTU)	NTU	3.5	NS
6.	Total Dissolved Solids mg/l	mg/l	599	2100
7.	Total Suspended Solids mg/l, max,	mg/l	38	100
8.	Dissolved Oxygen (DO)	mg/l	6.8	NS
9.	Oil and grease, mg/l	mg/l	BDL	10
10.	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH),	mg/l max	-	1.0
11.	C.O.D	(mg/l)	40.8	250
12.	B.O.D	(mg/l)	5.5	30

NS - Not Specified

BDL - Below Detection limit

*Anandita Das*  
Sr. Chemist  
Aditi R&D Services



*[Signature]*  
Technical Manager  
Aditi R&D Services, Sindri



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## TEST REPORT OF DRINKING WATER FOR THE MONTH OF FEBRUARY 2024

Ref. No. & Date		NAME AND ADDRESS OF THE CLIENT		
ARDS/23-24/2057 Dt. 05/03/2024		TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD. CHASNALLA – 828135, DIST. - DHANBAD		
P.O. NO. & Date		6000036592 & Date : 29.01.2024		
Season		POST MONSOON		
Location of Sample		TASRA ( CORE ZONE )		
Sample Description		GROUND WATER		
Analysis Started on : 27/02/2024				
Date of Sample Collection		26/02/2024	Analysis completed on	04/03/2024
Test Procedure		IS:3025		
TEST RESULT				
Sl. No.	Parameters	Value	IS: 10500: 2012	
			Accepted Limit	Permissible Limit
1.	Colour Hazen units	1	5	15
2.	Odour	Agreeable	Agreeable	Agreeable
3.	Taste	Agreeable	Agreeable	Agreeable
4.	Turbidity NTU Max	2.4	1	5
5.	Total Dissolved Solids mg/l, Max	720	500	2000
6.	pH Value	7.3	6.5 to 8.5	6.5 to 8.5
7.	Total Hardness (as CaCO <sub>3</sub> ) mg/l, Max	541.8	200	600
8.	Calcium (as Ca) mg/l, Max	154.8	75	200
9.	Magnesium (as Mg)mg/l, Max	37.3	30	100
10.	Copper (as Cu) mg/l, Max	0.02	0.05	1.5
11.	Iron (as Fe) mg/l Max	0.05	1.0	NR
12.	Manganese (as Mn) mg/l, Max	<0.001	0.1	0.3
13.	Chlorides (as Cl) mg/l, Max	100.7	250	1000
14.	Sulphate (as SO <sub>4</sub> ) mg/l Max	19.6	200	400
15.	Nitrate mg/l, (as NO <sub>3</sub> )	4.6	45	NR
16.	Fluoride (as F) mg/l	0.42	1.0	1.5
17.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) mg/l, Max	-	0.001	0.002
18.	Mercury (as Hg)mg/l, Max	-	0.001	NR
19.	Cadmium (as Cd) mg/l, Max	-	0.01	NR
20.	Selenium (as Se mg/l, Max	-	0.01	NR
21.	Arsenic (as As) mg/l, Max	<0.001	0.01	0.05
22.	Cyanide (as Cn) mg/l, Max	<0.001	0.05	NR
23.	Lead (As Pb) mg/l Max	<0.001	0.05	NR
24.	Zinc (as Zn) mg/l Max	0.44	5.0	15
25.	Arionic detergents (as MBAS), mg/l, Max	-	0.2	1.0
26.	Chromium (as Cr <sup>+6</sup> ) mg/l	0.007	0.05	NR
27.	Mineral Oil mg/l, Max	-	0.01	NR
28.	Residual, free chlorine mg/l, Min	NIL	0.2	1.0

Remarks: All the parameters of samples tested are within the permissible limit of Drinking Water Standard IS – 10500 : 2012

NR- No Relaxation

Sr. Chemist  
Aditi R&D Services



Technical Manager  
Aditi R&D Services, Sindri

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## TEST REPORT OF DRINKING WATER FOR THE MONTH OF FEBRUARY 2024

Ref. No. & Date		NAME AND ADDRESS OF THE CLIENT		
ARDS/23-24/2058 Dt. 05/03/2024		TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD. CHASNALLA – 828135, DIST. - DHANBAD		
P.O. NO. & Date		6000036592 & Date : 29.01.2024		
Season		POST MONSOON		
Location of Sample		ROHRABANDH ( CORE ZONE )		
Sample Description		GROUND WATER		
Date of Sample Collection		26/02/2024	Analysis Started on : 27/02/2024	
Test Procedure		Analysis completed on		04/03/2024
		IS:3025		
TEST RESULT				
Sl. No.	Parameters	Value	IS: 10500: 2012	
			Accepted Limit	Permissible Limit
1.	Colour Hazen units	1	5	15
2.	Odour	Agreeable	Agreeable	Agreeable
3.	Taste	Agreeable	Agreeable	Agreeable
4.	Turbidity NTU Max	0.9	1	5
5.	Total Dissolved Solids mg/l, Max	658	500	2000
6.	pH Value	7.2	6.5 to 8.5	6.5 to 8.5
7.	Total Hardness (as CaCO <sub>3</sub> ) mg/l, Max	403.2	200	600
8.	Calcium (as Ca) mg/l, Max	120.96	75	200
9.	Magnesium (as Mg)mg/l, Max	24.2	30	100
10.	Copper (as Cu) mg/l, Max	0.04	0.05	1.5
11.	Iron (as Fe) mg/l Max	0.08	1.0	NR
12.	Manganese (as Mn) mg/l, Max	<0.001	0.1	0.3
13.	Chlorides (as Cl) mg/l, Max	64.58	250	1000
14.	Sulphate (as SO <sub>4</sub> ) mg/l Max	54.30	200	400
15.	Nitrate mg/l, (as NO <sub>3</sub> )	7.7	45	NR
16.	Fluoride (as F) mg/l	0.58	1.0	1.5
17.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) mg/l, Max	-	0.001	0.002
18.	Mercury (as Hg)mg/l, Max	-	0.001	NR
19.	Cadmium (as Cd) mg/l, Max	-	0.01	NR
20.	Selenium (as Se mg/l, Max	-	0.01	NR
21.	Arsenic (as As) mg/l, Max	<0.001	0.01	0.05
22.	Cyanide (as Cn) mg/l, Max	<0.001	0.05	NR
23.	Lead (As Pb) mg/l Max	<0.001	0.05	NR
24.	Zinc (as Zn) mg/l Max	0.56	5.0	15
25.	Arionic detergents (as MBAS), mg/l, Max	-	0.2	1.0
26.	Chromium (as Cr <sup>6+</sup> ) mg/l	0.01	0.05	NR
27.	Mineral Oil mg/l, Max	-	0.01	NR
28.	Residual, free chlorine mg/l, Min	NIL	0.2	1.0

Remarks: All the parameters of samples tested are within the permissible limit of Drinking Water Standard  
IS - 10500 : 2012

NR- No Relaxation

*Anandilax*  
Sr. Chemist

Aditi R&D Services



*Technical Manager*  
Aditi R&D Services, Sindri

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Phone: 0326-2952377 (O)  
Mobile: 09471358492, 09431512608

## TEST REPORT OF DRINKING WATER FOR THE MONTH OF FEBRUARY 2024

Ref. No. & Date		NAME AND ADDRESS OF THE CLIENT		
ARDS/23-24/2059 Dt. 05/03/2024		TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD. CHASNALLA – 828135, DIST. - DHANBAD		
P.O. NO. & Date		6000036592 & Date : 29.01.2024		
Season		POST MONSOON		
Location of Sample		KANDRA ( CORE ZONE )		
Sample Description		GROUND WATER		
		Analysis Started on : 27/02/2024		
Date of Sample Collection		26/02/2024	Analysis completed on	04/03/2024
Test Procedure		IS:3025		
TEST RESULT				
Sl. No.	Parameters	Value	IS: 10500: 2012	
			Accepted Limit	Permissible Limit
1.	Colour Hazen units	1	5	15
2.	Odour	Agreeable	Agreeable	Agreeable
3.	Taste	Agreeable	Agreeable	Agreeable
4.	Turbidity NTU Max	3.0	1	5
5.	Total Dissolved Solids mg/l, Max	804	500	2000
6.	pH Value	7.1	6.5 to 8.5	6.5 to 8.5
7.	Total Hardness (as CaCO <sub>3</sub> ) mg/l, Max	592.2	200	600
8.	Calcium (as Ca) mg/l, Max	173.0	75	200
9.	Magnesium (as Mg)mg/l, Max	38.3	30	100
10.	Copper (as Cu) mg/l, Max	0.04	0.05	1.5
11.	Iron (as Fe) mg/l Max	0.06	1.0	NR
12.	Manganese (as Mn) mg/l, Max	<0.001	0.1	0.3
13.	Chlorides (as Cl) mg/l, Max	138.66	250	1000
14.	Sulphate (as SO <sub>4</sub> ) mg/l Max	14.4	200	400
15.	Nitrate mg/l, (as NO <sub>3</sub> )	7.1	45	NR
16.	Fluoride (as F) mg/l	0.62	1.0	1.5
17.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) mg/l, Max	-	0.001	0.002
18.	Mercury (as Hg)mg/l, Max	-	0.001	NR
19.	Cadmium (as Cd) mg/l, Max	-	0.01	NR
20.	Selenium (as Se mg/l, Max	-	0.01	NR
21.	Arsenic (as As) mg/l, Max	<0.001	0.01	0.05
22.	Cyanide (as Cn) mg/l, Max	<0.001	0.05	NR
23.	Lead (As Pb) mg/l Max	<0.001	0.05	NR
24.	Zinc (as Zn) mg/l Max	0.48	5.0	15
25.	Arionic detergents (as MBAS), mg/l, Max	-	0.2	1.0
26.	Chromium (as Cr+ <sup>6</sup> ) mg/l	0.009	0.05	NR
27.	Mineral Oil mg/l, Max	-	0.01	NR
28.	Residual, free chlorine mg/l, Min	NIL	0.2	1.0

Remarks: All the parameters of samples tested are within the permissible limit of Drinking Water Standard  
IS – 10500 : 2012

NR- No Relaxation

*Anand*  
Sr. Chemist



*Intaj*

Technical Manager  
Aditi R&D Services, Sindri

Aditi R&D Services

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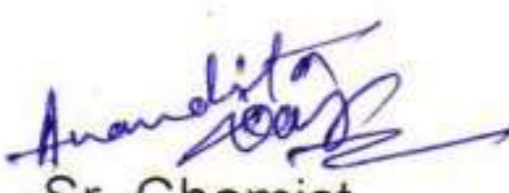
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## TEST REPORT OF SURFACE WATER FOR THE MONTH OF FEBRUARY 2024

TEST REPORT OF SURFACE WATER FOR THE MONTH OF FEBRUARY 2024			
Ref. No. & Date		NAME AND ADDRESS OF THE CLIENT	
ARDS/23-24/2065 Dt. 06/03/2024		TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD. CHASNALLA – 828135, DIST. - DHANBAD	
P.O. NO. & Date		6000036592 & Date : 29.01.2024	
Season		POST MONSOON	
Location of Sample Collection UPSTREAM OF DAMODAR RIVER		Analysis Started on	28/02/2024
Date & Time Sample Collection	27/02/2024	Analysis completed on	05/03/2024
Test Procedure		IS:3025	
TEST RESULT			
Sl. No.	Parameters	Value	(IS :2296) Surface Water Class "C" Tolerance Limit
1.	Colour Hazen units	1	300
2.	Dissolved Oxygen, mg/l	5.3	4
3.	B.O.D. (3 days at 27°C)	1.7	3
4.	Total Dissolved Solids mg/l, Max	352	1500
5.	pH Value	8.1	6.5 – 8.5
6.	Conductivity (µs/CM)	540	
7.	Turbidity (NTU)	1.8	
8.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) mg/l, Max	-	0.005
9.	Oil and grease, mg/l	BDL	0.1
10.	C.O.D., mg/l	29.9	-
11.	Total Suspended Solids , mg/l	32	-

Remarks: All the parameters of samples tested are within the permissible limit of General standard.  
BDL – Below Detection Limit

  
Sr. Chemist  
Aditi R&D Services



  
Technical Manager  
Aditi R&D Services, Sindri

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Mobile: 09471358492, 09431512608

### TEST REPORT OF SURFACE WATER FOR THE MONTH OF FEBRUARY 2024

Ref. No. & Date		NAME AND ADDRESS OF THE CLIENT	
ARDS/23-24/2061 Dt. 05/03/2024		TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD. CHASNALLA – 828135, DIST. - DHANBAD	
P.O. NO. & Date		6000036592 & Date : 29.01.2024	
Season		POST MONSOON	
Location of Sample DOWNSTREAM OF DAMODAR RIVER		Analysis Started on	27/02/2024
Date & Time Sample Collection	26/02/2024	Analysis completed on	04/03/2024
Test Procedure		IS:3025	
TEST RESULT			
Sl. No.	Parameters	Value	(IS :2296) Surface Water Class “C” Tolerance Limit
1.	Colour Hazen units	1	300
2.	Dissolved Oxygen, mg/l	5.1	4
3.	B.O.D. (3 days at 27°C)	1.9	3
4.	Total Dissolved Solids mg/l, Max	345	1500
5.	pH Value	8.2	6.5 – 8.5
6.	Conductivity (µS/cm)	530	
7.	Turbidity (NTU)	2.0	
8.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) mg/l, Max	-	0.005
9.	Oil and grease, mg/l	BDL	0.1
10.	C.O.D., mg/l	22.5	-
11.	Total Suspended Solids , mg/l	35	-

Remarks: All the parameters of samples tested are within the permissible limit of General standard.  
BDL – Below Detection Limit

Sr. Chemist  
Aditi R&D Services



Technical Manager  
Aditi R&D Services, Sindri

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Phone: 0326-2952377 (O)

Mobile: 09471358492, 09431512608

## TEST REPORT OF DRINKING WATER FOR THE MONTH OF FEBRUARY 2024

Ref. No. & Date		NAME AND ADDRESS OF THE CLIENT		
ARDS/23-24/2057 Dt. 05/03/2024		TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD. CHASNALLA – 828135, DIST. - DHANBAD		
P.O. NO. & Date		6000036592 & Date : 29.01.2024		
Season		POST MONSOON		
Location of Sample		TASRA ( CORE ZONE )		
Sample Description		GROUND WATER		
Analysis Started on : 27/02/2024				
Date of Sample Collection		26/02/2024	Analysis completed on	04/03/2024
Test Procedure		IS:3025		
TEST RESULT				
Sl. No.	Parameters	Value	IS: 10500: 2012	
			Accepted Limit	Permissible Limit
1.	Colour Hazen units	1	5	15
2.	Odour	Agreeable	Agreeable	Agreeable
3.	Taste	Agreeable	Agreeable	Agreeable
4.	Turbidity NTU Max	2.4	1	5
5.	Total Dissolved Solids mg/l, Max	720	500	2000
6.	pH Value	7.3	6.5 to 8.5	6.5 to 8.5
7.	Total Hardness (as CaCO <sub>3</sub> ) mg/l, Max	541.8	200	600
8.	Calcium (as Ca) mg/l, Max	154.8	75	200
9.	Magnesium (as Mg)mg/l, Max	37.3	30	100
10.	Copper (as Cu) mg/l, Max	0.02	0.05	1.5
11.	Iron (as Fe) mg/l Max	0.05	1.0	NR
12.	Manganese (as Mn) mg/l, Max	<0.001	0.1	0.3
13.	Chlorides (as Cl) mg/l, Max	100.7	250	1000
14.	Sulphate (as SO <sub>4</sub> ) mg/l Max	19.6	200	400
15.	Nitrate mg/l, (as NO <sub>3</sub> )	4.6	45	NR
16.	Fluoride (as F) mg/l	0.42	1.0	1.5
17.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) mg/l, Max	-	0.001	0.002
18.	Mercury (as Hg)mg/l, Max	-	0.001	NR
19.	Cadmium (as Cd) mg/l, Max	-	0.01	NR
20.	Selenium (as Se mg/l, Max	-	0.01	NR
21.	Arsenic (as As) mg/l, Max	<0.001	0.01	0.05
22.	Cyanide (as Cn) mg/l, Max	<0.001	0.05	NR
23.	Lead (As Pb) mg/l Max	<0.001	0.05	NR
24.	Zinc (as Zn) mg/l Max	0.44	5.0	15
25.	Arionic detergents (as MBAS), mg/l, Max	-	0.2	1.0
26.	Chromium (as Cr <sup>+6</sup> ) mg/l	0.007	0.05	NR
27.	Mineral Oil mg/l, Max	-	0.01	NR
28.	Residual, free chlorine mg/l, Min	NIL	0.2	1.0

Remarks: All the parameters of samples tested are within the permissible limit of Drinking Water Standard IS – 10500 : 2012

NR- No Relaxation

Sr. Chemist  
Aditi R&D Services



Technical Manager  
Aditi R&D Services, Sindri

### Statements :

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# ADITI R&D SERVICES

Testing Laboratory

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ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified

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Jharkhand - 828107  
Email ID: sindriaditi@gmail.com  
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Phone: 0326-2952377 (O)  
Mobile: 09471358492, 09431512608

## TEST REPORT OF DRINKING WATER FOR THE MONTH OF FEBRUARY 2024

Ref. No. & Date		NAME AND ADDRESS OF THE CLIENT		
ARDS/23-24/2058 Dt. 05/03/2024		TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD. CHASNALLA – 828135, DIST. - DHANBAD		
P.O. NO. & Date		6000036592 & Date : 29.01.2024		
Season		POST MONSOON		
Location of Sample		ROHRABANDH ( CORE ZONE )		
Sample Description		GROUND WATER		
Date of Sample Collection		26/02/2024	Analysis Started on : 27/02/2024	
Test Procedure		Analysis completed on		04/03/2024
		IS:3025		
TEST RESULT				
Sl. No.	Parameters	Value	IS: 10500: 2012	
			Accepted Limit	Permissible Limit
1.	Colour Hazen units	1	5	15
2.	Odour	Agreeable	Agreeable	Agreeable
3.	Taste	Agreeable	Agreeable	Agreeable
4.	Turbidity NTU Max	0.9	1	5
5.	Total Dissolved Solids mg/l, Max	658	500	2000
6.	pH Value	7.2	6.5 to 8.5	6.5 to 8.5
7.	Total Hardness (as CaCO <sub>3</sub> ) mg/l, Max	403.2	200	600
8.	Calcium (as Ca) mg/l, Max	120.96	75	200
9.	Magnesium (as Mg)mg/l, Max	24.2	30	100
10.	Copper (as Cu) mg/l, Max	0.04	0.05	1.5
11.	Iron (as Fe) mg/l Max	0.08	1.0	NR
12.	Manganese (as Mn) mg/l, Max	<0.001	0.1	0.3
13.	Chlorides (as Cl) mg/l, Max	64.58	250	1000
14.	Sulphate (as SO <sub>4</sub> ) mg/l Max	54.30	200	400
15.	Nitrate mg/l, (as NO <sub>3</sub> )	7.7	45	NR
16.	Fluoride (as F) mg/l	0.58	1.0	1.5
17.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) mg/l, Max	-	0.001	0.002
18.	Mercury (as Hg)mg/l, Max	-	0.001	NR
19.	Cadmium (as Cd) mg/l, Max	-	0.01	NR
20.	Selenium (as Se mg/l, Max	-	0.01	NR
21.	Arsenic (as As) mg/l, Max	<0.001	0.01	0.05
22.	Cyanide (as Cn) mg/l, Max	<0.001	0.05	NR
23.	Lead (As Pb) mg/l Max	<0.001	0.05	NR
24.	Zinc (as Zn) mg/l Max	0.56	5.0	15
25.	Arionic detergents (as MBAS), mg/l, Max	-	0.2	1.0
26.	Chromium (as Cr <sup>6+</sup> ) mg/l	0.01	0.05	NR
27.	Mineral Oil mg/l, Max	-	0.01	NR
28.	Residual, free chlorine mg/l, Min	NIL	0.2	1.0

Remarks: All the parameters of samples tested are within the permissible limit of Drinking Water Standard  
IS - 10500 : 2012

NR- No Relaxation

*Anandilax*  
Sr. Chemist

Aditi R&D Services



*Technical Manager*  
Aditi R&D Services, Sindri

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Phone: 0326-2952377 (O)  
Mobile: 09471358492, 09431512608

## TEST REPORT OF DRINKING WATER FOR THE MONTH OF FEBRUARY 2024

Ref. No. & Date		NAME AND ADDRESS OF THE CLIENT		
ARDS/23-24/2059 Dt. 05/03/2024		TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD. CHASNALLA – 828135, DIST. - DHANBAD		
P.O. NO. & Date		6000036592 & Date : 29.01.2024		
Season		POST MONSOON		
Location of Sample		KANDRA ( CORE ZONE )		
Sample Description		GROUND WATER		
		Analysis Started on : 27/02/2024		
Date of Sample Collection		26/02/2024	Analysis completed on	04/03/2024
Test Procedure		IS:3025		
TEST RESULT				
Sl. No.	Parameters	Value	IS: 10500: 2012	
			Accepted Limit	Permissible Limit
1.	Colour Hazen units	1	5	15
2.	Odour	Agreeable	Agreeable	Agreeable
3.	Taste	Agreeable	Agreeable	Agreeable
4.	Turbidity NTU Max	3.0	1	5
5.	Total Dissolved Solids mg/l, Max	804	500	2000
6.	pH Value	7.1	6.5 to 8.5	6.5 to 8.5
7.	Total Hardness (as CaCO <sub>3</sub> ) mg/l, Max	592.2	200	600
8.	Calcium (as Ca) mg/l, Max	173.0	75	200
9.	Magnesium (as Mg)mg/l, Max	38.3	30	100
10.	Copper (as Cu) mg/l, Max	0.04	0.05	1.5
11.	Iron (as Fe) mg/l Max	0.06	1.0	NR
12.	Manganese (as Mn) mg/l, Max	<0.001	0.1	0.3
13.	Chlorides (as Cl) mg/l, Max	138.66	250	1000
14.	Sulphate (as SO <sub>4</sub> ) mg/l Max	14.4	200	400
15.	Nitrate mg/l, (as NO <sub>3</sub> )	7.1	45	NR
16.	Fluoride (as F) mg/l	0.62	1.0	1.5
17.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) mg/l, Max	-	0.001	0.002
18.	Mercury (as Hg)mg/l, Max	-	0.001	NR
19.	Cadmium (as Cd) mg/l, Max	-	0.01	NR
20.	Selenium (as Se mg/l, Max	-	0.01	NR
21.	Arsenic (as As) mg/l, Max	<0.001	0.01	0.05
22.	Cyanide (as Cn) mg/l, Max	<0.001	0.05	NR
23.	Lead (As Pb) mg/l Max	<0.001	0.05	NR
24.	Zinc (as Zn) mg/l Max	0.48	5.0	15
25.	Arionic detergents (as MBAS), mg/l, Max	-	0.2	1.0
26.	Chromium (as Cr+ <sup>6</sup> ) mg/l	0.009	0.05	NR
27.	Mineral Oil mg/l, Max	-	0.01	NR
28.	Residual, free chlorine mg/l, Min	NIL	0.2	1.0

Remarks: All the parameters of samples tested are within the permissible limit of Drinking Water Standard  
IS – 10500 : 2012

NR- No Relaxation

*Anand*  
Sr. Chemist



*Intaj*

Technical Manager  
Aditi R&D Services, Sindri

Aditi R&D Services

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Testing Laboratory

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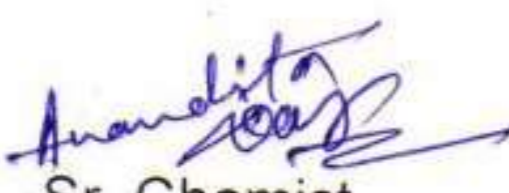
ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified

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## TEST REPORT OF SURFACE WATER FOR THE MONTH OF FEBRUARY 2024

TEST REPORT OF SURFACE WATER FOR THE MONTH OF FEBRUARY 2024			
Ref. No. & Date		NAME AND ADDRESS OF THE CLIENT	
ARDS/23-24/2065 Dt. 06/03/2024		TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD. CHASNALLA – 828135, DIST. - DHANBAD	
P.O. NO. & Date		6000036592 & Date : 29.01.2024	
Season		POST MONSOON	
Location of Sample Collection UPSTREAM OF DAMODAR RIVER		Analysis Started on	28/02/2024
Date & Time Sample Collection	27/02/2024	Analysis completed on	05/03/2024
Test Procedure		IS:3025	
TEST RESULT			
Sl. No.	Parameters	Value	(IS :2296) Surface Water Class "C" Tolerance Limit
1.	Colour Hazen units	1	300
2.	Dissolved Oxygen, mg/l	5.3	4
3.	B.O.D. (3 days at 27°C)	1.7	3
4.	Total Dissolved Solids mg/l, Max	352	1500
5.	pH Value	8.1	6.5 – 8.5
6.	Conductivity (µs/CM)	540	
7.	Turbidity (NTU)	1.8	
8.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) mg/l, Max	-	0.005
9.	Oil and grease, mg/l	BDL	0.1
10.	C.O.D., mg/l	29.9	-
11.	Total Suspended Solids , mg/l	32	-

Remarks: All the parameters of samples tested are within the permissible limit of General standard.  
BDL – Below Detection Limit

  
Sr. Chemist  
Aditi R&D Services



  
Technical Manager  
Aditi R&D Services, Sindri

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# ADITI R&D SERVICES

## Testing Laboratory

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Phone: 0326-2952377 (O)  
Mobile: 09471358492, 09431512608

### TEST REPORT OF SURFACE WATER FOR THE MONTH OF FEBRUARY 2024

Ref. No. & Date		NAME AND ADDRESS OF THE CLIENT	
ARDS/23-24/2061 Dt. 05/03/2024		TASRA COAL MINING PROJECT, COLLIERIES DIVISION, STEEL AUTHORITY OF INDIA LTD. CHASNALLA – 828135, DIST. - DHANBAD	
P.O. NO. & Date		6000036592 & Date : 29.01.2024	
Season		POST MONSOON	
Location of Sample DOWNSTREAM OF DAMODAR RIVER		Analysis Started on	27/02/2024
Date & Time Sample Collection	26/02/2024	Analysis completed on	04/03/2024
Test Procedure		IS:3025	
TEST RESULT			
Sl. No.	Parameters	Value	(IS :2296) Surface Water Class “C” Tolerance Limit
1.	Colour Hazen units	1	300
2.	Dissolved Oxygen, mg/l	5.1	4
3.	B.O.D. (3 days at 27°C)	1.9	3
4.	Total Dissolved Solids mg/l, Max	345	1500
5.	pH Value	8.2	6.5 – 8.5
6.	Conductivity (µS/cm)	530	
7.	Turbidity (NTU)	2.0	
8.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) mg/l, Max	-	0.005
9.	Oil and grease, mg/l	BDL	0.1
10.	C.O.D., mg/l	22.5	-
11.	Total Suspended Solids , mg/l	35	-

Remarks: All the parameters of samples tested are within the permissible limit of General standard.  
BDL – Below Detection Limit

Sr. Chemist  
Aditi R&D Services



Technical Manager  
Aditi R&D Services, Sindri

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## vi. COAL PRODUCTION AND WASTE EXCAVATION( O/B) DETAILS AND ENVIRONMENT STATEMENT FY 23-24).

F/Y 2021-22			F/Y 2022-23			F/Y 2023-24		
Month	production Coal(IN MT)	OB CUBIC METRE	Month	production Coal(IN MT)	OB CUBIC METRE	Month	production Coal(IN MT)	OB CUBIC METRE
April'21	0.00	0	April'22	61514.66	209764.99	April'23	39571.911	134940.216
May'21	0.00	0	May'22	0.000	0	May'23	26627.460	90799.638
June,21	180.210	614.516	June,22	0.000	0	June,23	36798.203	125481.889
July'21	17573.030	59924.032	July'22	14912.370	50851.181	July'23	53069.230	180966.074
Aug'21	26629.910	9079776.31	Aug'22	27750.390	94628.829	Aug'23	62875.995	214407.142
Sep'21	35286.970	120328.567	Sep'22	29322.770	99990.645	Sep'23	Nil	Nil
Oct'21	23482.350	80074.813	Oct'22	29796.300	101605.383	Oct'23	Nil	Nil
Nov'21	35076.620	119611.274	Nov'22	38223.090	130340.736	Nov'23	Nil	Nil
Dec'21	54633.410	186299.928	Dec'22	29183.400	99515.394	Dec'23	Nil	Nil
Jan'22	52089.820	177626.286	Jan'23	27701.340	94461.569	Jan'24	Nil	Nil
Feb'22	36904.530	125844.447	Feb'23	30807.920	105055.0072	Feb'24	853.570	2910.673
Mar'22	58370.410	199043.098	Mar'23	13299.890	45352.624	Mar'24	113520.200	387103.882
<b>TOTAL</b>	<b>340227.260</b>	<b>10149143.27</b>	<b>TOTAL</b>	<b>302512.13</b>	<b>1031566,358</b>	<b>Total</b>	<b>333316.569</b>	<b>749505.632</b>



World Environment Day June 5th 2023



 **GPS Map Camera**

**Rohraband, Jharkhand, India**

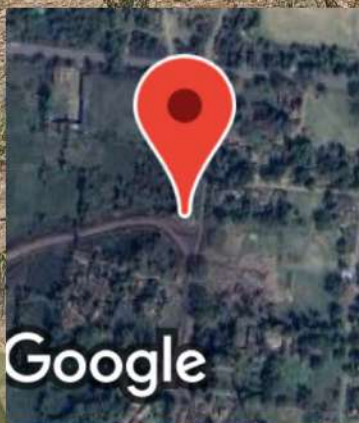
JFXM+W9J, Deuli - Khairpal Rd, Rohraband, Jharkhand

828107, India

Lat 23.64954°

Long 86.482552°

05/06/23 12:05 PM GMT +05:30



Google

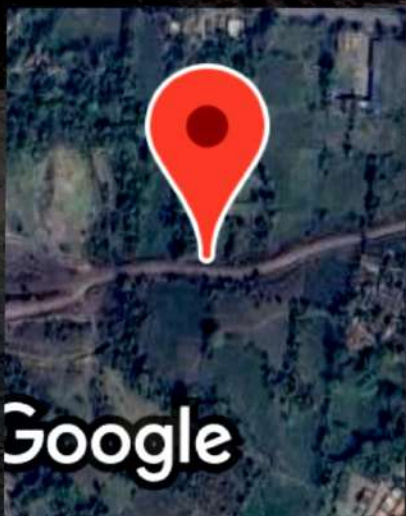
Plantation drive along haul Road road of mine



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**GPS Map Camera**



**Rohraband, Jharkhand, India**

**MF2J+F4R, Rohraband, Jharkhand 828107, India**

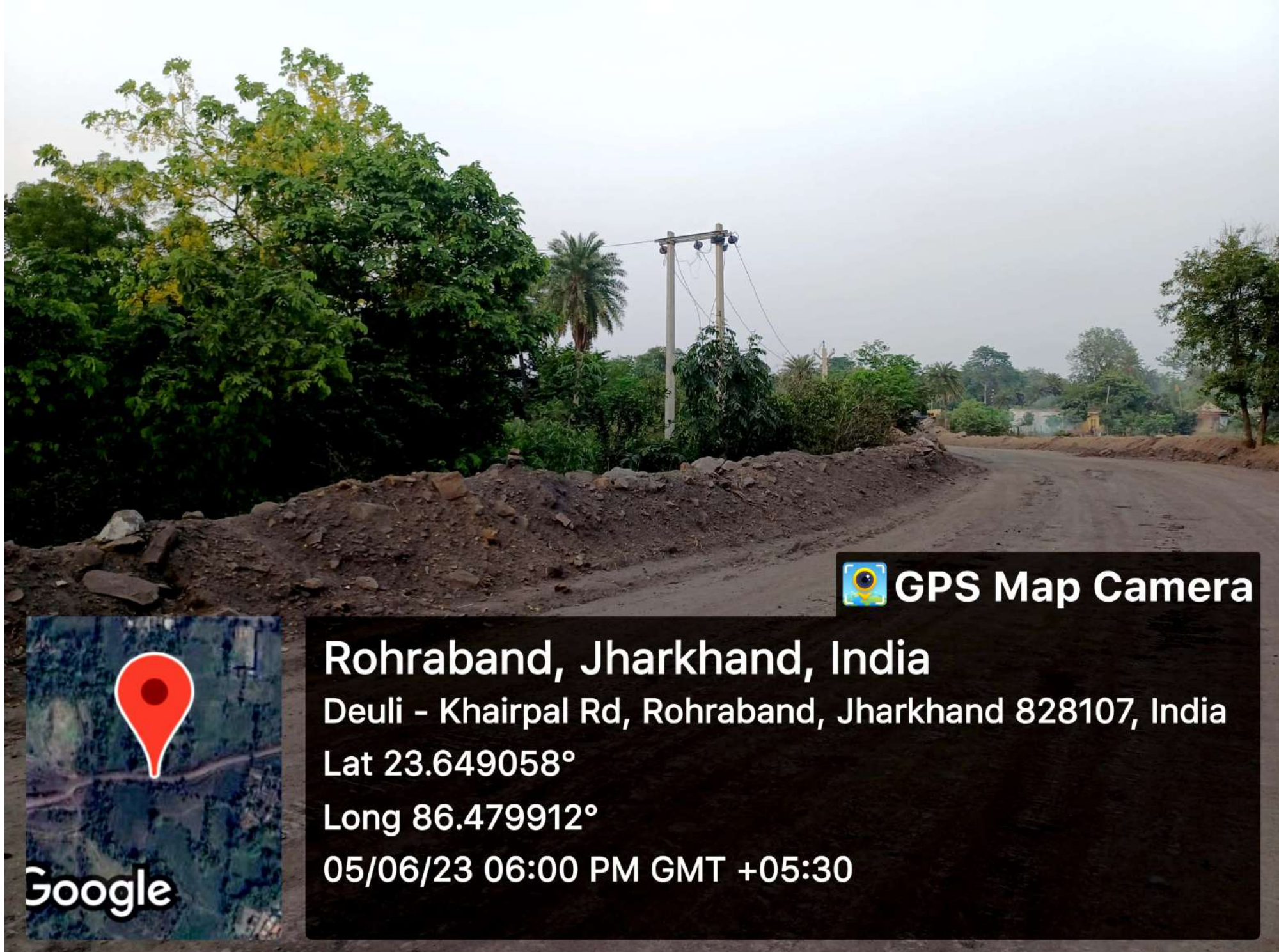
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**Long 86.479863°**

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 **GPS Map Camera**

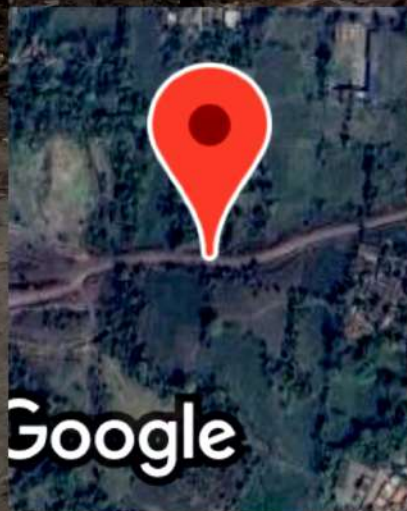
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**Deuli - Khairpal Rd, Rohraband, Jharkhand 828107, India**

**Lat 23.649058°**

**Long 86.479912°**

**05/06/23 06:00 PM GMT +05:30**



Monitoring Locations



Air Monitoring Locations



Air Monitoring Locations



Air Monitoring Locations



Air Monitoring Locations



Noise Monitoring Locations



Noise Monitoring Locations



Noise Monitoring Locations



Noise Monitoring Locations



**Soil Monitoring Locations**



**Soil Monitoring Locations**



**Soil Monitoring Locations**



**Soil Monitoring Locations**



**GW Monitoring Locations**



**GW Monitoring Locations**



**GW Monitoring Locations**



**GW Monitoring Locations**



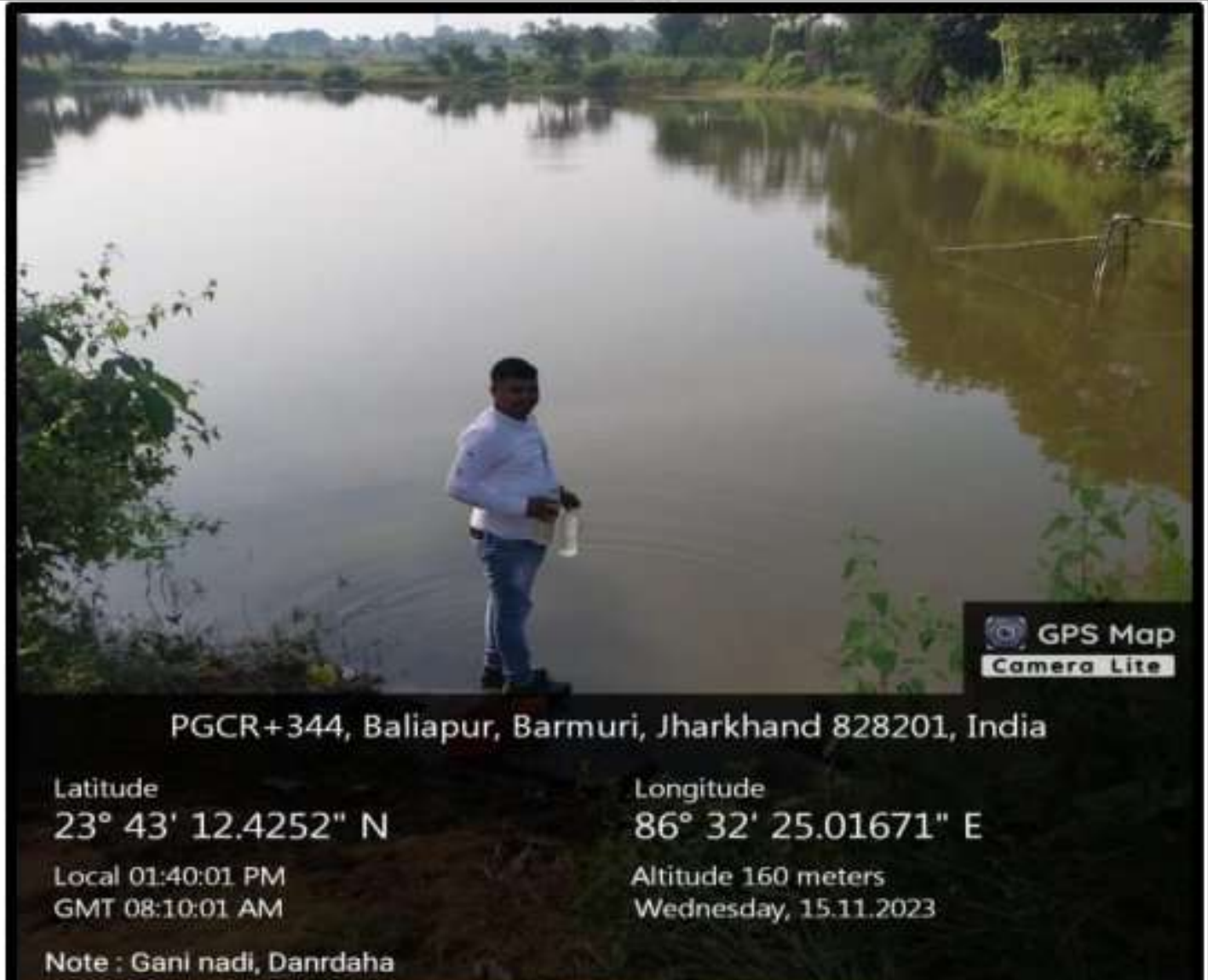
**SW Monitoring Locations**



**SW Monitoring Locations**



**SW Monitoring Locations**



**SW Monitoring Locations**