

**Environmental Monitoring Report  
For  
December -2025**

**Project: Samleswari OCP  
Area: Ib Valley  
Coalfield: Ib Valley**



**Mahanadi Coalfields Limited**



**सीएमपीडीआई**  
पिपी एन  
**cmpdi**  
Mini Ratna

**Central Mine Planning & Design Institute Ltd.**  
(A Subsidiary of Coal India Ltd.)

**Regional Institute-VII, Samantpuri, P.O : RRL, Bhubaneswar-751013 (Odisha)**  
[Assistance from Environment Division, CMPDI(HQs), Ranchi ]

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Test Report



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 MoEF  
**cmpdi**  
 New Delhi

**AMBIENT AIR QUALITY DATA**

Area :

**Ib Valley**

(Compliance Station)

Project :

**Samleswari OCP**

(conc. in  $\mu\text{g}/\text{cu.m.}$ )

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	CO (mg/m3)	Dust Generating Source	Distance from DGS
05-Dec-25	West of the Mine	316	191	79	18.39	40.46	-	Distance From 'y' Curve Railway Siding	About 450m
05-Dec-25	South of the Mine	328	175	84	19.90	30.93	-	Mine Haul Roads	About 400m
05-Dec-25	East of the Mine	322	178	80	12.57	28.12	-	Coal Transportation Road	About 500m
26-Dec-25	West of the Mine	327	178	84	16.27	25.44	-	Distance From 'y' Curve Railway Siding	About 450m
26-Dec-25	South of the Mine	299	189	85	17.42	18.03	-	Mine Haul Roads	About 400m
26-Dec-25	East of the Mine	236	189	82	14.58	34.09	-	Coal Transportation Road	About 500m

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 MoEF Standards, Notification dated 25th September, 2000  
 CMPDI  
 BANGALORE

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Test Report

AMBIENT AIR QUALITY DATA

Area :

Ib Valley

(Reference Station)

Project :

Samleswari OCP

(conc. in  $\mu\text{g}/\text{cu.m.}$ )

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
01-Dec-25	Kudaloi Village	234	94	53	12.47	18.82	Mining Activities	About 1000m
02-Dec-25	Kudaloi Village	214	89	50	14.78	21.96	Mining Activities	About 1000m
03-Dec-25	Rampur Sub Area (Reported only)	221	87	49	18.24	30.21	Coal Stock And CT Road	About 1000m
03-Dec-25	Khokelmal (Reported Only)	228	92	51	10.26	15.97	Railway siding	About 1000m
04-Dec-25	Khokelmal (Reported Only)	218	89	45	13.89	29.89	Railway siding	About 1000m
04-Dec-25	Rampur Sub Area (Reported only)	204	81	43	15.95	17.92	Coal Stock And CT Road	About 1000m
08-Dec-25	Kudaloi Village	228	79	42	16.98	27.82	Mining Activities	About 1000m
09-Dec-25	Kudaloi Village	206	83	45	10.59	32.93	Mining Activities	About 1000m
10-Dec-25	Khokelmal (Reported Only)	213	80	42	12.37	41.22	Railway siding	About 1000m
10-Dec-25	Rampur Sub Area (Reported only)	192	77	41	17.66	16.15	Coal Stock And CT Road	About 1000m
11-Dec-25	Rampur Sub Area (Reported only)	213	85	44	13.31	19.24	Coal Stock And CT Road	About 1000m
11-Dec-25	Khokelmal (Reported Only)	183	76	37	11.32	35.55	Railway siding	About 1000m
16-Dec-25	Kudaloi Village	195	75	43	12.45	22.09	Mining Activities	About 1000m
17-Dec-25	Kudaloi Village	210	84	49	13.44	39.28	Mining Activities	About 1000m
18-Dec-25	Khokelmal (Reported Only)	226	90	53	14.78	21.96	Railway siding	About 1000m
18-Dec-25	Rampur Sub Area (Reported only)	197	86	46	15.66	20.83	Coal Stock And CT Road	About 1000m
19-Dec-25	Rampur Sub Area (Reported only)	213	89	49	13.63	37.36	Coal Stock And CT Road	About 1000m
19-Dec-25	Khokelmal (Reported Only)	138	78	45	16.98	22.82	Railway siding	About 1000m
22-Dec-25	Kudaloi Village	219	87	51	11.00	33.88	Mining Activities	About 1000m
23-Dec-25	Kudaloi Village	199	78	45	12.73	38.58	Mining Activities	About 1000m
24-Dec-25	Khokelmal (Reported Only)	208	82	47	10.59	32.93	Railway siding	About 1000m
24-Dec-25	Rampur Sub Area (Reported only)	223	93	50	14.85	26.13	Coal Stock And CT Road	About 1000m

Authorized Signatory  
CMPDI, R- VII, LAB  
BHUBANESWAR

100 60 80 80

*Janak*

Project :

Samleswari OCP

(conc. in  $\mu\text{g}/\text{cu.m.}$ )

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
25-Dec-25	Rampur Sub Area (Reported only)	243	95	56	13.13	20.16	Coal Stock And CT Road	About 1000m
25-Dec-25	Khokelmal (Reported Only)	225	89	52	11.69	21.51	Railway siding	About 1000m
29-Dec-25	Kudaloi Village	240	91	54	10.75	24.47	Mining Activities	About 1000m
30-Dec-25	Kudaloi Village	247	95	58	12.99	33.16	Mining Activities	About 1000m

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C.M.P.D. R-7, LAB  
SAMESWAR  
E.M.V. 2009

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Test Report



AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area :

Ib Valley

Project :

Samleswari OCP

Date of Sampling	Monitoring Station	Ammonia (NH <sub>3</sub> )	Ozone (O <sub>3</sub> )	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo(a)Pyrene	Benzene
		(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(mg/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(µg/m <sup>3</sup> )
01-Dec-25	Kudaloi Village	<20.0	20.10	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
02-Dec-25	Kudaloi Village	<20.0	15.50	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
03-Dec-25	Rampur Sub Area (Reported only)	<20.0	10.42	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
03-Dec-25	Khokelmal (Reported Only)	<20.0	27.37	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
04-Dec-25	Rampur Sub Area (Reported only)	<20.0	21.07	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
04-Dec-25	Khokelmal (Reported Only)	<20.0	23.00	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
08-Dec-25	Kudaloi Village	<20.0	22.03	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
09-Dec-25	Kudaloi Village	<20.0	11.87	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
10-Dec-25	Rampur Sub Area (Reported only)	<20.0	16.23	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
10-Dec-25	Khokelmal (Reported Only)	<20.0	22.03	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
11-Dec-25	Khokelmal (Reported Only)	<20.0	21.55	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
11-Dec-25	Rampur Sub Area (Reported only)	<20.0	16.72	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
16-Dec-25	Kudaloi Village	<20.0	24.70	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
17-Dec-25	Kudaloi Village	<20.0	27.37	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
18-Dec-25	Rampur Sub Area (Reported only)	<20.0	14.05	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
18-Dec-25	Khokelmal (Reported Only)	<20.0	16.72	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
19-Dec-25	Rampur Sub Area (Reported only)	<20.0	21.80	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
19-Dec-25	Khokelmal (Reported Only)	<20.0	12.12	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
22-Dec-25	Kudaloi Village	<20.0	19.02	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
23-Dec-25	Kudaloi Village	<20.0	13.08	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
24-Dec-25	Rampur Sub Area (Reported only)	<20.0	15.98	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
24-Dec-25	Khokelmal (Reported Only)	<20.0	11.62	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
25-Dec-25	Khokelmal (Reported Only)	<20.0	15.98	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL

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CMPDI, R.VII, LAB  
BHUBANESWAR

400(24 hours)	180(hours)	1.0(24 hours)	6.0(Annual)	20(Annual)	02(8hours)	01(annual)	05(annual)
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*Jasmati*

Project :

Samleswari OCP

Date of Sampling	Monitoring Station	Ammonia(NH3)	Ozone(O3)	Lead(Pb)	Arsenic(As)	Nickel(Ni)	CO	Benzo(a)Pyrene	Benzene
		(µg/m3)	(µg/m3)	(µg/m3)	(ng/m3)	(ng/m3)	(mg/m3)	(ng/m3)	(µg/m3)
25-Dec-25	Rampur Sub Area (Reported only)	<20.0	23.73	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
29-Dec-25	Kudaloi Village	<20.0	16.72	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
30-Dec-25	Kudaloi Village	<20.0	26.63	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL

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Standard signatory  
CMPDI, RI-VII, LAB  
BHUBANESWAR

400(24 hours)	180(hours)	1.0(24 hours)	6.0(Annual)	20(Annual)	02(8 hours)	01(annual)	05(annual)
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**TABLE-**  
**NOISE LEVEL MONITORING DATA**

AREA : **1b Valley**

PROJECT : **Samleswari OCP**

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
11-Dec-25	South of the Mine	53.6	43.2
11-Dec-25	East of the Mine	58.4	53.8
11-Dec-25	Rampur Sub Area	52.4	40.3
11-Dec-25	Kudaloi Village	50.9	42.6
11-Dec-25	West of the Mine	49.3	40.8
11-Dec-25	Khokelmal (Reported Only)	52.8	40.5
26-Dec-25	East of the Mine	59.2	51.4
26-Dec-25	South of the Mine	54.8	44.6
26-Dec-25	Khokelmal (Reported Only)	52.4	42.9
26-Dec-25	Rampur Sub Area	52.8	40.6
26-Dec-25	Kudaloi Village	50.6	41.8
26-Dec-25	West of the Mine	49.2	40.2

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**Authorised Signatory**  
**CMPDI, RI-VII, LAB**  
**BANESWAR**  
MoEF Standard Notification dated 25th September, 2000

MoEF Standard Notification dated 25th September, 2000	6.00 AM - 10.00 PM Leq 75dB(A) (Industrial)	10.00 PM - 6.00 AM Leq 70dB(A) (Industrial)
MoEF Standard Notification dated 25th September, 2000	6.00 AM - 10.00 PM Leq 55dB(A) (Residential)	10.00 PM - 6.00 AM Leq 45dB(A) (Residential)
MoEF Standard Notification dated 25th September, 2000	6.00 AM - 10.00 PM Leq 65dB(A) (Commercial)	10.00 PM - 6.00 AM Leq 55dB(A) (Commercial)
MoEF Standard Notification dated 25th September, 2000	6.00 AM - 10.00 PM Leq 50dB(A) (Silence Zone)	10.00 PM - 6.00 AM Leq 40dB(A) (Silence Zone)

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TABLE--

## EFFLUENT QUALITY DATA

Area :

IB Valley

(All dimensions are in mg/l unless otherwise stated except pH)

Project :

Samaleswari OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	TDS	DO	Remarks
15-Dec-25	Inlet of ETP	6.05	<4.0	57	48	-	-	-	
15-Dec-25	Outlet of ETP	7.61	<4.0	43	32	-	-	-	
15-Dec-25	Mine Sump Water	6.70	<4.0	37	28	-	-	-	
31-Dec-25	Inlet of ETP	6.88	<4.0	31	28	-	-	-	
31-Dec-25	Outlet of ETP	7.26	<4.0	22	16	-	-	-	

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CMPDI, RI-VII, LAB  
Bhubaneswar

MoEF Standard Notification dated 25th September, 2000 and MoEF Schedule VI, General standard for discharge of Environmental Pollutants Part A: Effluents	5.5-9.0	10	100	250	30
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CMPTD  
MAHARASHTRA

TABLE-

EFFLUENT QUALITY DATA

Area :

IB Valley

(All dimensions are in mg/l unless otherwise stated except pH)

Project :

Samaleswari OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	TDS	DO	MPN/100mL
15-Dec-25	STP Outlet	6.50	-	22	-	<2.0	-	-	210
15-Dec-25	STP Inlet	6.78	-	30	-	2.3	-	-	240
31-Dec-25	STP Outlet	7.64	-	27	-	<2.0	-	-	170
31-Dec-25	STP Inlet	7.18	-	36	-	2.9	-	-	280

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CMPTD, RI-VII, LAB  
SAMALSWARI

G.S.R. 126 S(E) Effluent discharge standards (applicable to all mode of disposal), Sewage Treatment Plants (STPs)	6.5-9.5	-	<100	-	30	-	<1000
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Mini Botani

## Effluent Quality (all Parameter): - Ib Valley Area

Project (OCP / UG)	Samleswari OCP	MoEF-Sch-VI Standards
NAME OF THE STATION	Mine Sump Water	
Date of Sampling	14-Nov-2025	
Odour	Unobjectionable	-
Colour(Hazen)	3	-
Temperature(°C)	23.9	Shall not exceed 5 °C above the receiving temperature
pH	6.30	5.5-9.0
Total Hardness (asCaCO <sub>3</sub> ),mg/L	990.58	-
Total Dissolved Solids, mg/L	1189	-
Nitrate Nitrogen(mg/L)(As N)	3.35	10
Ammonical Nitrogen , mg/l (As N)	4.91	50
Total Kjeldhal Nitrogen, mg/l (As N)	10.47	100
Sulphide (mg/L)	<0.10	2
BOD [3 days at 27°C] (mg/L)	3.1	30
Fluoride(mg/L)	0.69	2
Copper(mg/L)	<0.03	3
Manganese(mg/L)	0.49	2
Iron(mg/L)	<0.1	3
Zinc(mg/L)	0.67	5
Lead, mg/l	<0.005	0.1
Cadmium, mg/l	<0.001	2
Total Chromium(mg/L)	<0.01	2
Hexavalent Chromium(mg/L)	<0.05	0.1
Nickel(mg/L)	0.03	3
Arsenic, mg/l	<0.005	0.2
Selenium (mg/L)	<0.005	0.05
Dissolved Phosphate(mg/L)	<4.0	5
Phenolics (mg/L)	<0.001	1

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## Drinking Water Quality Data IB Valley Area

Project / OCP	Samaleswari OCP		Indian Drinking Standards (IS-10500):2012	
	Well Water From Kudopali	Tap Water From Samaleswari OCP Colony	Acceptable	Permissible
Monitoring Station				
Date of Sampling	15-Dec-2025	15-Dec-2025		
Colour(Hazen)	3	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	2	1	5
pH	7.32	7.65	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	33.28	120.64	200	600
Chloride(mg/L)	54.40	23.32	250	1000
Sulphate(mg/L)	47.30	6.26	200	400
Nitrate(mg/L)	48.6	<0.5	45	No relaxation
Total Hardness (Ca CO <sub>3</sub> )(mg/L)	149.18	100.80	200	600
Calcium(mg/L)	42.02	22.62	75	200
Fluoride(mg/L)	<0.3	0.38	1	1.5
Total Dissolve Solid(mg/L)	266	168	500	2000
Copper(mg/L)	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	0.08	<0.04	0.1	0.3
Iron(mg/L)	<0.1	<0.1	1	No relaxation
Zinc(mg/L)	<0.04	<0.04	5	15
Lead(mg/L)	<0.005	<0.005	0.01	No relaxation
Cadmium(mg/L)	<0.001	<0.001	0.003	No relaxation
Total Chromium (mg/L)	<0.01	<0.01	0.05	No relaxation
Arsenic(mg/L)	<0.005	<0.005	0.01	No relaxation
Boron(mg/L)	<0.2	<0.2	0.5	2.4

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Authorised Signatory  
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*Janaki*



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कोशिका

## Drinking Water Quality Data IB Valley Area

Project / OCP	Samaleswari OCP		Indian Drinking Standards (IS-10500):2012	
	Well Water From Kudopali	Tap Water From Samaleswari OCP Colony	Acceptable	Permissible
Monitoring Station				
Date of Sampling	15-Dec-2025	15-Dec-2025		
Selenium(mg/L)	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	10.86	7.64		
Potassium(mg/L)	1.36	3.69		
Phenolics(mg/L)	<0.001	<0.001	0.001	0.002
Residual Free Chlorine(mg/L)	<0.2	<0.2	0.2	1
MPN (Index/100 ml)	Not Detected	Not Detected	-	-

*Hoffmann*

Authorised Signatory  
CMPDI, RI-VII, LAB  
BILGANESWAR

*Jamal*



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## Drinking Water Quality Data IB Valley Area

Project / OCP	Samleswari OCP			Indian Drinking Standard (IS-10500):2012	
	Inlet Water from IWSS, IB Valley Area	Outlet Water from IWSS, IB Valley Area	Well Water From Lajkura	Acceptable	Permissible
Date of Sampling	15-Dec-2025	15-Dec-2025	15-Dec-2025	Acceptable	Permissible
Colour(Hazen)	1	2	3	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	1	2	1	5
pH	7.75	7.76	7.72	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	74.88	70.72	62.40	200	600
Chloride(mg/L)	11.66	17.49	56.35	250	1000
Sulphate(mg/L)	34.80	40.12	30.72	200	400
Nitrate(mg/L)	<0.5	<0.5	48.1	45	No relaxation
Total Hardness (Ca CO <sub>3</sub> )(mg/L)	96.77	108.86	173.38	200	600
Calcium(mg/L)	25.86	24.24	54.94	75	200
Fluoride(mg/L)	0.42	0.68	<0.3	1	1.5
Total Dissolve Solid(mg/L)	158	166	288	500	2000
Copper(mg/L)	<0.03	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	<0.04	<0.04	0.1	0.3
Iron(mg/L)	<0.1	<0.1	<0.1	1	No relaxation
Zinc(mg/L)	<0.04	<0.04	0.11	5	15
Lead(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Cadmium(mg/L)	<0.001	<0.001	<0.001	0.003	No relaxation
Total Chromium (mg/L)	<0.01	<0.01	<0.01	0.05	No relaxation
Arsenic(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Boron(mg/L)	<0.2	<0.2	<0.2	0.5	2.4

*T. H. H. H.*  
Authorized Signatory  
CMPDI RI-VII, LAB  
BHUBANESWAR

*J. H. H.*



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विश्वे स्त  
cmpdi  
Water Quality

## Drinking Water Quality Data IB Valley Area

Project / OCP	Samleswari OCP			Indian Drinking Standards (IS-10500):2012	
	Inlet Water from IWSS, IB Valley Area	Outlet Water from IWSS, IB Valley Area	Well Water From Lajkura		
Monitoring Station					
Date of Sampling	15-Dec-2025	15-Dec-2025	15-Dec-2025	Acceptable	Permissible
Selenium(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	5.44	6.65	13.87		
Potassium(mg/L)	2.15	2.91	4.15		
Phenolics(mg/L)	<0.001	<0.001	<0.001	0.001	0.002
Residual Free Chlorine(mg/L)	<0.2	<0.2	<0.2	0.2	1
MPN (Index/100 ml)	Not Detected	Not Detected	Not Detected	-	-

  
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CMPDI RI-VII, LAB  
BHUBANESWAR





Legend  
Monitoring Station

Samleswarf OCP

Kucalon Village

Rampur Sub Area

West of the Mine

South of the Mine

Kholaimai

Google Earth

**Environmental Monitoring Report  
For  
December -2025**

**Project: Lajkura OCP  
Area: Ib Valley  
Coalfield: Ib Valley**



**Mahanadi Coalfields Limited**



**सीएमपीडीआई**  
मिनी रत्न  
**cmpdi**  
Mini Ratna

**Central Mine Planning & Design Institute Ltd.**  
(A Subsidiary of Coal India Ltd.)

**Regional Institute-VII, Samantpuri, P.O : RRL, Bhubaneswar-751013 (Odisha)**  
[Assistance from Environment Division, CMPDI(HQs), Ranchi ]

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सीएनपीसीआर  
CPCB  
CENTRAL POLLUTION CONTROL BOARD

Test Report

AMBIENT AIR QUALITY DATA

Area :

Ib Valley

(Compliance Station)

Project :

Lajkura OCP

(conc. in  $\mu\text{g}/\text{cu.m.}$ )

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO <sub>2</sub>	NO <sub>x</sub>	CO (mg/m <sup>3</sup> )	Dust Generating Source	Distance from DGS
05-Dec-25	Near South Coal Stock	275	168	72	13.94	37.64	-	Mining Activities, Coal Transportation	About 500m
05-Dec-25	Near Project Office	263	174	71	17.47	40.78	-	Domestic, OCP, Transportation	About 500m
26-Dec-25	Near South Coal Stock	204	165	77	12.89	16.89	-	Mining Activities, Coal Transportation	About 500m
26-Dec-25	Near Project Office	317	192	86	16.23	38.11	-	Domestic, OCP, Transportation	About 500m

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MoEF Standards Notification dated 25th September, 2000

500

250

120

120

828 Hours

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## Test Report

## AMBIENT AIR QUALITY DATA



Area :

Ib Valley

(Reference Station)

Project :

Lajkura OCP

(conc. in  $\mu\text{g}/\text{cu.m.}$ )

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
01-Dec-25	VIP Guest House IB Valley	183	83	41	15.70	29.47	Coal Stock Yard, Surface Bunker, Coal	About 800m
02-Dec-25	VIP Guest House IB Valley	223	89	46	10.52	24.36	Coal Stock Yard, Surface Bunker, Coal	About 800m
03-Dec-25	Khokelmal	228	92	51	10.26	15.97	Railway siding	About 1000m
03-Dec-25	Chuakani	214	84	43	19.26	14.78	Transportation	About 300m
04-Dec-25	Chuakani	198	86	48	17.74	34.88	Transportation	About 300m
04-Dec-25	Khokelmal	218	89	45	13.89	29.89	Railway siding	About 1000m
08-Dec-25	VIP Guest House IB Valley	205	78	40	15.71	10.56	Coal Stock Yard, Surface Bunker, Coal	About 800m
09-Dec-25	VIP Guest House IB Valley	244	91	50	9.79	32.34	Coal Stock Yard, Surface Bunker, Coal	About 800m
10-Dec-25	Chuakani	205	83	41	12.99	20.74	Transportation	About 300m
10-Dec-25	Khokelmal	213	80	42	12.37	41.22	Railway siding	About 1000m
11-Dec-25	Chuakani	233	94	51	14.36	39.69	Transportation	About 300m
11-Dec-25	Khokelmal	183	76	37	11.32	35.55	Railway siding	About 1000m
16-Dec-25	VIP Guest House IB Valley	189	80	42	19.90	31.13	Coal Stock Yard, Surface Bunker, Coal	About 800m
17-Dec-25	VIP Guest House IB Valley	196	83	48	18.85	29.49	Coal Stock Yard, Surface Bunker, Coal	About 800m
18-Dec-25	Chuakani	195	79	43	12.75	35.39	Transportation	About 300m
18-Dec-25	Khokelmal	226	90	53	14.78	21.96	Railway siding	About 1000m
19-Dec-25	Khokelmal	138	78	45	16.98	22.82	Railway siding	About 1000m
19-Dec-25	Chuakani	210	84	48	12.19	24.83	Transportation	About 300m
22-Dec-25	VIP Guest House IB Valley	219	91	53	21.51	33.64	Coal Stock Yard, Surface Bunker, Coal	About 800m
23-Dec-25	VIP Guest House IB Valley	199	85	47	20.15	31.52	Coal Stock Yard, Surface Bunker, Coal	About 800m
24-Dec-25	Chuakani	228	95	54	10.52	22.15	Transportation	About 300m
24-Dec-25	Khokelmal	208	82	47	10.59	32.93	Railway siding	About 1000m

10/10/2009

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Project :

Lajkura OCP

(conc. in  $\mu\text{g}/\text{cu.m.}$ )

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
25-Dec-25	Chuakani	221	87	50	15.71	14.63	Transportation	About 300m
25-Dec-25	Khokelmal	225	89	52	11.69	21.51	Railway siding	About 1000m
29-Dec-25	VIP Guest House IB Valley	215	87	52	19.09	29.85	Coal Stock Yard, Surface Bunker, Coal	About 800m
30-Dec-25	VIP Guest House IB Valley	186	77	46	18.86	29.50	Coal Stock Yard, Surface Bunker, Coal	About 800m

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NAAQs, 2009		100	60	80	80
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Test Report



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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area :

Ib Valley

Project :

Lajkura OCP

Date of Sampling	Monitoring Station	Ammonia (NH <sub>3</sub> )	Ozone (O <sub>3</sub> )	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo(a)Pyrene	Benzene
		(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(µg/m <sup>3</sup> )
01-Dec-25	VIP Guest House IB Valley	<20.0	24.95	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
02-Dec-25	VIP Guest House IB Valley	<20.0	26.63	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
03-Dec-25	Khokelmal	<20.0	27.37	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
03-Dec-25	Chuakani	<20.0	20.10	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
04-Dec-25	Khokelmal	<20.0	23.00	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
04-Dec-25	Chuakani	<20.0	22.77	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
08-Dec-25	VIP Guest House IB Valley	<20.0	26.88	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
09-Dec-25	VIP Guest House IB Valley	<20.0	21.32	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
10-Dec-25	Khokelmal	<20.0	22.03	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
10-Dec-25	Chuakani	<20.0	29.88	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
11-Dec-25	Chuakani	<20.0	11.87	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
11-Dec-25	Khokelmal	<20.0	21.55	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
16-Dec-25	VIP Guest House IB Valley	<20.0	19.95	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
17-Dec-25	VIP Guest House IB Valley	<20.0	14.53	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
18-Dec-25	Khokelmal	<20.0	16.72	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
18-Dec-25	Chuakani	<20.0	17.92	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
19-Dec-25	Khokelmal	<20.0	12.12	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
19-Dec-25	Chuakani	<20.0	11.38	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
22-Dec-25	VIP Guest House IB Valley	<20.0	18.63	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
23-Dec-25	VIP Guest House IB Valley	<20.0	23.25	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
24-Dec-25	Khokelmal	<20.0	11.62	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
24-Dec-25	Chuakani	<20.0	19.13	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
25-Dec-25	Chuakani	<20.0	14.77	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL

Standard	400(24 hours)	180(hour)	1.0(24 hours)	6.0(Annual)	20(Annual)	02(8hours)	01(annual)	05(annual)
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Project :

Lajkura OCP

Date of Sampling	Monitoring Station	Ammonia(NH3)	Ozone(O3)	Lead(Pb)	Arsenic(As)	Nickel(Ni)	CO	Benzo(a)Pyrene	Benzene
		(µg/m3)	(µg/m3)	(µg/m3)	(ng/m3)	(ng/m3)	(mg/m3)	(ng/m3)	(µg/m3)
25-Dec-25	Khokelmal	<20.0	15.98	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
29-Dec-25	VIP Guest House IB Valley	<20.0	21.32	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
30-Dec-25	VIP Guest House IB Valley	<20.0	21.32	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL

As follows

Standard	400(24 hours)	180(hours)	1.0(24 hours)	6.0(Annual)	20(Annual)	02(8 hours)	01(annual)	05(annual)
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TABLE--

**NOISE LEVEL MONITORING DATA**

AREA :

*Ib Valley*

PROJECT :

*Lajkura OCP*

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
11-Dec-25	Near Project Office	64.7	56.5
11-Dec-25	Near South Coal Stock	60.1	54.2
11-Dec-25	Chuakani	49.2	42.7
11-Dec-25	VIP Guest House, IB Valley	50.4	42.6
11-Dec-25	Khokelmal	52.8	40.5
26-Dec-25	Near Project Office	64.6	56.9
26-Dec-25	Near South Coal Stock	66.2	61.4
26-Dec-25	Khokelmal	52.4	42.9
26-Dec-25	VIP Guest House, IB Valley	49.1	40.5
26-Dec-25	Chuakani	50.6	40.3

*Hajjooz*

MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 75dB(A) (Industrial)	10.00 PM -6.00 AM Leq 70dB(A) (Industrial)
MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 55dB(A) (Residential)	10.00 PM -6.00 AM Leq 45dB(A) (Residential)
MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 65dB(A) (Commercial)	10.00 PM -6.00 AM Leq 55dB(A) (Commercial)
MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 50dB(A) (Silence Zone)	10.00 PM -6.00 AM Leq 40dB(A) (Silence Zone)

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MPDI  
Maharashtra

TABLE-

**EFFLUENT QUALITY DATA**

Area :

IB Valley

(All dimensions are in mg/l unless otherwise stated except pH)

Project :

Lajkura OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	TDS	DO	MPN/100mL
15-Dec-25	STP Inlet	-	-	-	-	-	-	-	Under maintenance
15-Dec-25	STP Outlet	-	-	-	-	-	-	-	Under maintenance
31-Dec-25	STP Outlet	-	-	-	-	-	-	-	Under maintenance
31-Dec-25	STP Inlet	-	-	-	-	-	-	-	Under maintenance

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G.S.R. 126 5(E) Effluent discharge standards (applicable to all mode of disposal), Sewage Treatment Plants (STPs)	6.5-9.5	-	<100	-	30	-	<1000
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मिनी प्लान  
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Mini Plan

## Effluent Quality (all Parameter): - Ib Valley Area

Project (OCP / UG) NAME OF THE STATION	Lajkura OCP			MoEF-Sch-VI Standards
	Outlet of MDTP	Lajkura Railway Siding	Mine Sump Water	
Date of Sampling	14-Nov-2025	14-Nov-2025	14-Nov-2025	
Odour	Unobjectionable	Unobjectionable	Unobjectionable	
Colour(Hazen)	2	3	2	
Temperature(°C)	23.6	23.8	24.7	Shall not exceed 5 °C above the receiving temperature
pH	3.63	3.48	3.48	5.5-9.0
Total Hardness (asCaCO <sub>3</sub> ),mg/L	1285.73	1289.78	1124.00	-
Total Dissolved Solids, mg/L	1456	1448	1305	-
Nitrate Nitrogen(mg/L)(As N)	1.13	1.08	1.80	10
Ammonical Nitrogen, mg/l (As N)	5.66	5.81	5.01	50
Total Kjeldhal Nitrogen, mg/l (As N)	12.21	13.96	12.21	100
Sulphide (mg/L)	<0.10	<0.10	<0.10	2
BOD [3 days at 27°C] (mg/L)	2.6	3.5	3.4	30
Fluoride(mg/L)	1.18	1.33	0.32	2
Copper(mg/L)	<0.03	<0.03	<0.03	3
Manganese(mg/L)	1.48	1.47	1.48	2
Iron(mg/L)	0.63	2.04	2.00	3
Zinc(mg/L)	1.98	2.28	2.18	5
Lead, mg/l	<0.005	<0.005	<0.005	0.1
Cadmium, mg/l	<0.001	<0.001	<0.001	2
Total Chromium(mg/L)	<0.01	<0.01	<0.01	2
Hexavalent Chromium(mg/L)	<0.05	<0.05	<0.05	0.1
Nickel(mg/L)	0.03	0.04	0.07	3
Arsenic, mg/l	<0.005	<0.005	<0.005	0.2
Selenium (mg/L)	<0.005	<0.005	<0.005	0.05
Dissolved Phosphate(mg/L)	<4.0	<4.0	<4.0	5
Phenolics (mg/L)	<0.001	<0.001	<0.001	1

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## Drinking Water Quality Data IB Valley Area

Project / OCP	Lajkura OCP		Indian Drinking Standards (IS-10500):2012	
	Madhuban Nagar Well Water	Adarsh Nagar Colony Well Water	Acceptable	Permissible
Monitoring Station				
Date of Sampling	15-Dec-2025	15-Dec-2025		
Colour(Hazen)	1	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	1	2	1	5
pH	6.63	7.57	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	20.80	128.96	200	600
Chloride(mg/L)	15.54	52.46	250	1000
Sulphate(mg/L)	6.60	20.35	200	400
Nitrate(mg/L)	20.63	0.55	45	No relaxation
Total Hardness (Ca CO <sub>3</sub> )(mg/L)	48.38	161.28	200	600
Calcium(mg/L)	12.93	43.63	75	200
Fluoride(mg/L)	<0.3	<0.3	1	1.5
Total Dissolve Solid(mg/L)	98	248	500	2000
Copper(mg/L)	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	0.05	<0.04	0.1	0.3
Iron(mg/L)	<0.1	<0.1	1	No relaxation
Zinc(mg/L)	0.13	<0.04	5	15
Lead(mg/L)	<0.005	<0.005	0.01	No relaxation
Cadmium(mg/L)	<0.001	<0.001	0.003	No relaxation
Total Chromium (mg/L)	<0.01	<0.01	0.05	No relaxation
Arsenic(mg/L)	<0.005	<0.005	0.01	No relaxation
Boron(mg/L)	<0.2	<0.2	0.5	2.4

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## Drinking Water Quality Data IB Valley Area

Project / OCP	Lajkura OCP		Indian Drinking Standards (IS-10500):2012	
	Madhuban Nagar Well Water	Adarsh Nagar Colony Well Water	Acceptable	Permissible
Monitoring Station				
Date of Sampling	15-Dec-2025	15-Dec-2025		
Selenium(mg/L)	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	6.24	7.33		
Potassium(mg/L)	2.48	8.21		
Phenolics(mg/L)	<0.001	<0.001	0.001	0.002
Residual Free Chlorine(mg/L)	<0.2	<0.2	0.2	1
MPN (Index/100 ml)	Not Detected	Not Detected	-	-

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Mini Report

## Drinking Water Quality Data IB Valley Area

Project / OCP	Lajkura OCP		Indian Drinking Standards (IS-10500):2012	
	Chhualiberna Village Well Water	VIP Guest House Tap Water	Acceptable	Permissible
Monitoring Station				
Date of Sampling	15-Dec-2025	15-Dec-2025		
Colour(Hazen)	2	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	1	3	1	5
pH	6.03	7.67	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	8.32	66.56	200	600
Chloride(mg/L)	13.60	19.43	250	1000
Sulphate(mg/L)	4.8	36.2	200	400
Nitrate(mg/L)	20.58	0.78	45	No relaxation
Total Hardness (Ca CO <sub>3</sub> )(mg/L)	40.32	108.86	200	600
Calcium(mg/L)	9.70	22.62	75	200
Fluoride(mg/L)	0.75	<0.3	1	1.5
Total Dissolve Solid(mg/L)	78	160	500	2000
Copper(mg/L)	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	0.05	<0.04	0.1	0.3
Iron(mg/L)	<0.1	0.1	1	No relaxation
Zinc(mg/L)	0.13	<0.04	5	15
Lead(mg/L)	<0.005	<0.005	0.01	No relaxation
Cadmium(mg/L)	<0.001	<0.001	0.003	No relaxation
Total Chromium (mg/L)	<0.01	<0.01	0.05	No relaxation
Arsenic(mg/L)	<0.005	<0.005	0.01	No relaxation
Boron(mg/L)	<0.2	<0.2	0.5	2.4

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## Drinking Water Quality Data IB Valley Area

Project / OCP	Lajkura OCP		Indian Drinking Standards (IS-10500):2012	
	Chhualiberna Village Well Water	VIP Guest House Tap Water	Acceptable	Permissible
Monitoring Station				
Date of Sampling	15-Dec-2025	15-Dec-2025		
Selenium(mg/L)	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	6.14	5.20		
Potassium(mg/L)	2.14	1.23		
Phenolics(mg/L)	<0.001	<0.001	0.001	0.002
Residual Free Chlorine(mg/L)	<0.2	<0.2	0.2	1
MPN (Index/100 ml)	Not Detected	Not Detected	-	-

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Lajkura OCP

Legend  
Monitoring Station

Chualkani

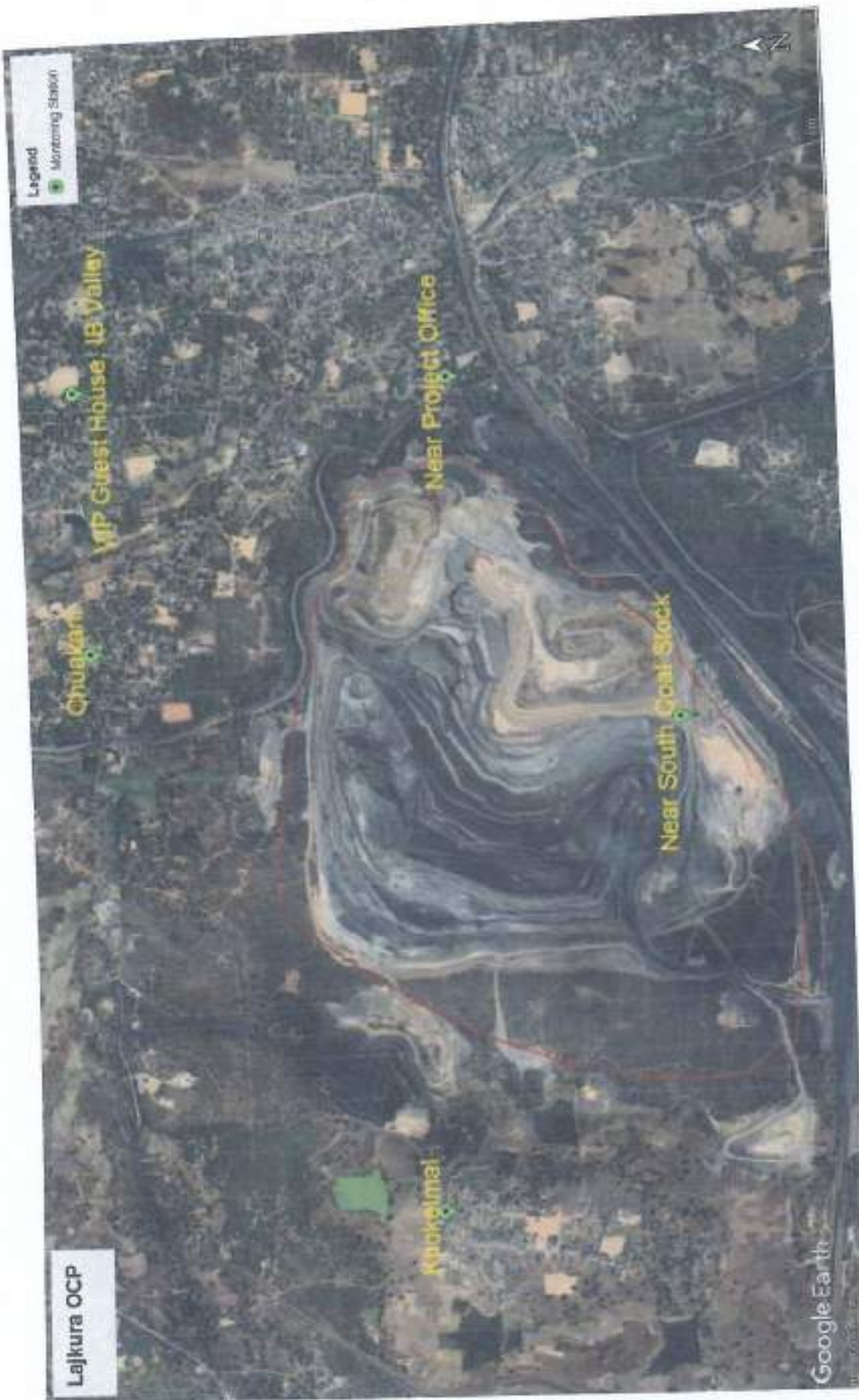
VIP Guest House, IB Valley

Kuchelimal

Near Project Office

Near South Coal Stock

Google Earth



**Environmental Monitoring Report  
For  
December -2025**

**Project: Central Hospital  
Area: Ib Valley  
Coalfield: Ib Valley**



**Mahanadi Coalfields Limited**



**सीएमपीडीआई**  
मिनी प्लान  
**cmpdi**  
Mini plan

**Central Mine Planning & Design Institute Ltd.**  
(A Subsidiary of Coal India Ltd.)

**Regional Institute-VII, Samantpuri, P.O : RRL, Bhubaneswar-751013 (Odisha)**  
[Assistance from Environment Division, CMPDI(HQs), Ranchi ]

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TABLE--

### EFFLUENT QUALITY DATA

Area :

IB Valley

(All dimensions are in mg/l unless otherwise stated except pH)

Project :

Central Hospital

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	TDS	DO	Remarks
15-Dec-25	Discharge of Hospital	7.48	<4.0	25	20	2.4	-	-	

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MoEF Standard Notification dated 25th September, 2000 and MoEF Schedule VI, General standard for discharge of Environmental Pollutants Part A: Effluents	5.5-9.0	10	100	250	30
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**Environmental Monitoring Report  
For  
December -2025**

**Project: Kulda OCP  
Area: Basundhara  
Coalfield: Ib Valley**



**Mahanadi Coalfields Limited**



**Central Mine Planning & Design Institute Ltd.**  
(A Subsidiary of Coal India Ltd.)

**Regional Institute-VII, Samantpuri, P.O : RRL, Bhubaneswar-751013 (Odisha)**  
[Assistance from Environment Division, CMPDI(HQs), Ranchi ]

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Test Report



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CMPDI

AMBIENT AIR QUALITY DATA

Area : Basundhara

(Compliance Station)

Project :

Kulda OCP

(conc. in  $\mu\text{g}/\text{cu.m.}$ )

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	CO (mg/m <sup>3</sup> )	Dust Generating Source	Distance from DGS
05-Dec-25	Laikera Railway Siding	221	106	63	12.99	38.68	-	Coal Transportation	About 100m
05-Dec-25	Kulda PO Office	218	102	62	11.69	21.51	-	Mining Activities, Coal Transportation	About 100m
26-Dec-25	Laikera Railway Siding	224	106	63	12.54	25.41	-	Coal Transportation	About 100m
26-Dec-25	Kulda PO Office	223	103	65	17.47	40.78	-	Mining Activities, Coal Transportation	About 100m

Authorised signatory  
CMPDI  
Bhubaneswar

MoEF Standards Notification dated 25th September 2000

500 250 120 120 02 (Hours)

*Signature*

Test Report



AMBIENT AIR QUALITY DATA

Area : Basundhara

(Reference Station)

Project :

Kulda OCP

(conc. in  $\mu\text{g}/\text{cu.m.}$ )

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
01-Dec-25	North of CHP, Teleimal	218	80	42	11.09	18.82	Domestic, OCP, Transportation	About 500m
01-Dec-25	Bilaimunda Village	225	82	48	19.15	18.34	Village Road	About 500m
01-Dec-25	External CT Road, Barpali	186	67	36	17.67	21.59	Mining Activities, Coal Transportation	About 500m
01-Dec-25	South West of Working Face, Chakarpur	219	85	47	17.85	28.25	Village Road	About 500m
02-Dec-25	Bilaimunda Village	195	73	41	17.88	28.85	Village Road	About 500m
02-Dec-25	South West of Working Face, Chakarpur	203	79	43	8.61	36.27	Village Road	About 500m
02-Dec-25	External CT Road, Barpali	215	77	41	16.49	11.71	Mining Activities, Coal Transportation	About 500m
02-Dec-25	North of CHP, Teleimal	228	84	47	11.21	38.98	Domestic, OCP, Transportation	About 500m
08-Dec-25	Bilaimunda Village	204	79	44	9.81	39.39	Village Road	About 500m
08-Dec-25	South West of Working Face, Chakarpur	229	86	49	13.06	35.18	Village Road	About 500m
08-Dec-25	North of CHP, Teleimal	213	78	41	12.63	22.26	Domestic, OCP, Transportation	About 500m
08-Dec-25	External CT Road, Barpali	203	76	40	10.87	24.93	Mining Activities, Coal Transportation	About 500m
09-Dec-25	South West of Working Face, Chakarpur	195	79	42	14.67	21.63	Village Road	About 500m
09-Dec-25	North of CHP, Teleimal	217	76	39	8.20	33.85	Domestic, OCP, Transportation	About 500m
09-Dec-25	External CT Road, Barpali	183	71	35	21.46	37.97	Mining Activities, Coal Transportation	About 500m
09-Dec-25	Bilaimunda Village	199	76	42	8.15	19.08	Village Road	About 500m
16-Dec-25	External CT Road, Barpali	189	78	42	14.32	32.41	Mining Activities, Coal Transportation	About 500m
16-Dec-25	North of CHP, Teleimal	189	69	57	12.30	20.52	Domestic, OCP, Transportation	About 500m
16-Dec-25	Bilaimunda Village	204	81	47	12.15	20.47	Village Road	About 500m
16-Dec-25	South West of Working Face, Chakarpur	229	88	52	15.44	39.64	Village Road	About 500m
17-Dec-25	External CT Road, Barpali	183	71	37	14.18	28.65	Mining Activities, Coal Transportation	About 500m
17-Dec-25	North of CHP, Teleimal	187	64	36	11.34	23.89	Domestic, OCP, Transportation	About 500m

  
 14105/2025  
 Authorised Signatory  
 CMPDI, RI-VII, LAB  
 BHUBANESWAR

	100	60	80	80
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*Janata*

Project :

Kulda OCP

(conc. in  $\mu\text{g}/\text{cu.m.}$ )

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
17-Dec-25	Bilaimunda Village	197	76	43	10.41	23.74	Village Road	About 500m
17-Dec-25	South West of Working Face, Chakarpur	224	86	49	11.73	21.54	Village Road	About 500m
22-Dec-25	Bilaimunda Village	212	85	49	12.38	15.48	Village Road	About 500m
22-Dec-25	North of CHP, Teleimal	185	70	38	15.19	29.10	Domestic, OCP, Transportation	About 500m
22-Dec-25	South West of Working Face, Chakarpur	203	81	45	15.56	27.90	Village Road	About 500m
22-Dec-25	External CT Road, Barpali	184	75	39	14.04	39.68	Mining Activities, Coal Transportation	About 500m
23-Dec-25	Bilaimunda Village	205	81	47	12.48	40.06	Village Road	About 500m
23-Dec-25	External CT Road, Barpali	191	79	41	14.97	25.35	Mining Activities, Coal Transportation	About 500m
23-Dec-25	North of CHP, Teleimal	196	76	36	17.67	35.55	Domestic, OCP, Transportation	About 500m
23-Dec-25	South West of Working Face, Chakarpur	196	76	43	15.58	34.89	Village Road	About 500m
29-Dec-25	External CT Road, Barpali	196	80	42	10.50	37.60	Mining Activities, Coal Transportation	About 500m
29-Dec-25	North of CHP, Teleimal	182	79	38	14.66	33.50	Domestic, OCP, Transportation	About 500m
29-Dec-25	South West of Working Face, Chakarpur	210	84	47	18.75	38.80	Village Road	About 500m
29-Dec-25	Bilaimunda Village	189	73	42	13.88	22.12	Village Road	About 500m
30-Dec-25	South West of Working Face, Chakarpur	239	91	53	14.81	32.75	Village Road	About 500m
30-Dec-25	Bilaimunda Village	204	81	46	12.66	38.63	Village Road	About 500m
30-Dec-25	External CT Road, Barpali	195	81	41	12.98	18.56	Mining Activities, Coal Transportation	About 500m
30-Dec-25	North of CHP, Teleimal	186	78	41	14.25	36.86	Domestic, OCP, Transportation	About 500m

Authorised Laboratory  
 CMPDI, RI-VII, LAB  
 BHUBANESWAR

	100	60	80	80
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Janata

Test Report



AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area :

Basundhara

Project :

Kulda OCP

Date of Sampling	Monitoring Station	Ammonia (NH <sub>3</sub> )	Ozone (O <sub>3</sub> )	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo(a)Pyrene	Benzene
		(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(mg/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(µg/m <sup>3</sup> )
01-Dec-25	North of CHP, Teleimal	<20.0	27.60	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
01-Dec-25	Bilaimunda Village	<20.0	21.80	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
01-Dec-25	South West of Working Face, Chakarpur	<20.0	19.37	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
01-Dec-25	South West of Working Face, Chakarpur	<20.0	21.07	<0.1	<1.0	<1.0	0.2	BQL(QL=0.7)	BQL
01-Dec-25	External CT Road, Barpali	<20.0	11.13	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
02-Dec-25	Bilaimunda Village	<20.0	26.15	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
02-Dec-25	External CT Road, Barpali	<20.0	18.40	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
02-Dec-25	North of CHP, Teleimal	<20.0	23.00	<0.1	<1.0	<1.0	0.2	BQL(QL=0.7)	BQL
08-Dec-25	Bilaimunda Village	<20.0	24.95	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
08-Dec-25	External CT Road, Barpali	<20.0	25.43	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
08-Dec-25	North of CHP, Teleimal	<20.0	19.62	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
08-Dec-25	South West of Working Face, Chakarpur	<20.0	25.92	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
09-Dec-25	External CT Road, Barpali	<20.0	20.58	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
09-Dec-25	North of CHP, Teleimal	<20.0	25.67	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
09-Dec-25	South West of Working Face, Chakarpur	<20.0	18.65	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
09-Dec-25	Bilaimunda Village	<20.0	27.85	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
16-Dec-25	South West of Working Face, Chakarpur	<20.0	26.63	<0.1	<1.0	<1.0	0.2	BQL(QL=0.7)	BQL
16-Dec-25	North of CHP, Teleimal	<20.0	19.62	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
16-Dec-25	Bilaimunda Village	<20.0	15.02	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
16-Dec-25	External CT Road, Barpali	<20.0	26.63	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
17-Dec-25	South West of Working Face, Chakarpur	<20.0	25.43	<0.1	<1.0	<1.0	0.2	BQL(QL=0.7)	BQL
17-Dec-25	North of CHP, Teleimal	<20.0	27.60	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
17-Dec-25	Bilaimunda Village	<20.0	17.20	<0.1	<1.0	<1.0	0.2	BQL(QL=0.7)	BQL

400(24hrs)	180(hour)	1.0(24hrs)	6.0(Annual)	20(Annual)	02(Shou rs)	01(annual)	05(annual)
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Standard  
Authorised Signatory  
CMPDI, RI-VII, LAB  
BHUBANESWAR

*Jamali*

Project :

Kulda OCP

Date of Sampling	Monitoring Station	Ammonia(NH <sub>3</sub> )	Ozone(O <sub>3</sub> )	Lead(Pb)	Arsenic(As)	Nickel(Ni)	CO	Benzo(a)Pyrene	Benzene
		(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(mg/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(µg/m <sup>3</sup> )
17-Dec-25	External CT Road, Barpali	<20.0	22.03	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
22-Dec-25	Bilaimunda Village	<20.0	25.18	<0.1	<1.0	<1.0	0.2	BQL(QL=0.7)	BQL
22-Dec-25	North of CHP, Teleimal	<20.0	19.37	<0.1	<1.0	<1.0	0.2	BQL(QL=0.7)	BQL
22-Dec-25	External CT Road, Barpali	<20.0	25.18	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
22-Dec-25	South West of Working Face, Chakarpur	<20.0	21.55	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
23-Dec-25	Bilaimunda Village	<20.0	26.63	<0.1	<1.0	<1.0	0.2	BQL(QL=0.7)	BQL
23-Dec-25	South West of Working Face, Chakarpur	<20.0	22.52	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
23-Dec-25	North of CHP, Teleimal	<20.0	12.35	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
23-Dec-25	External CT Road, Barpali	<20.0	24.47	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
29-Dec-25	South West of Working Face, Chakarpur	<20.0	15.25	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
29-Dec-25	North of CHP, Teleimal	<20.0	12.60	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
29-Dec-25	External CT Road, Barpali	<20.0	17.92	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
29-Dec-25	Bilaimunda Village	<20.0	11.13	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
30-Dec-25	External CT Road, Barpali	<20.0	20.10	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
30-Dec-25	Bilaimunda Village	<20.0	11.13	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
30-Dec-25	South West of Working Face, Chakarpur	<20.0	11.13	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
30-Dec-25	North of CHP, Teleimal	<20.0	21.32	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL

Kafronik  
 Authorized Signatory  
 CMPDI, IV/VII, LAB  
 BHUBANESWAR

400(24hrs)	180(hour)	1.0(24hours)	6.0(Annual)	20(Annua)	02(8hours)	01(annual)	05(annual)
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Jamali



राष्ट्रीय  
सर्वेक्षण  
और  
अनुसंधान  
केन्द्र  
केन्द्रीय  
प्रदूषण  
नियंत्रण  
संस्थान  
CMPDI  
भारत

TABLE-

**NOISE LEVEL MONITORING DATA**

AREA :

Basundhara

PROJECT :

Kulda OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
13-Dec-25	Kulda PO Office	59.8	53.6
13-Dec-25	South West of Working Face Chakarpur	49.1	39.7
13-Dec-25	Laikera Railway Siding	52.4	40.2
29-Dec-25	Kulda PO Office	58.3	42.7
29-Dec-25	Laikera Railway Siding	49.2	40.9
29-Dec-25	South West of Working Face Chakarpur	52.4	42.1

Authorised Signatory  
CMPDI, VI, LAB  
BHUBANESWAR

MoEF Standard Notification dated 25th September, 2000	6.00 AM - 10.00 PM Leq 75dB(A) (Industrial)	10.00 PM - 6.00 AM Leq 70dB(A) (Industrial)
MoEF Standard Notification dated 25th September, 2000	6.00 AM - 10.00 PM Leq 55dB(A) (Residential)	10.00 PM - 6.00 AM Leq 45dB(A) (Residential)
MoEF Standard Notification dated 25th September, 2000	6.00 AM - 10.00 PM Leq 65dB(A) (Commercial)	10.00 PM - 6.00 AM Leq 55dB(A) (Commercial)
MoEF Standard Notification dated 25th September, 2000	6.00 AM - 10.00 PM Leq 50dB(A) (Silence Zone)	10.00 PM - 6.00 AM Leq 40dB(A) (Silence Zone)

Janaki



सीएमपीडीआई  
C.M.P.D.I.  
ANALYTICAL  
LABORATORY

TABLE--

**EFFLUENT QUALITY DATA**

Area :

Basundhara

(All dimensions are in mg/l unless otherwise stated except pH)

Project :

Kulda OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	TDS	DO	Remarks
13-Dec-25	Inlet of ETP	7.45	<4.0	35	40	-			
13-Dec-25	Mine Sump Water Near Kulda Nursery	7.38	<4.0	18	12	-			
13-Dec-25	Final Outlet Of ETP	7.58	<4.0	22	16	-			
30-Dec-25	Final Outlet Of ETP	6.92	<4.0	28	24	-			
31-Dec-25	Inlet of ETP	6.85	4.4	40	48	-			

In Hand  
Analytical Laboratory  
MoEF Standard Notification dated 25th September, 2000  
Annexure MoEF Schedule I General standard for discharge  
of Environmental Pollutants Part A: Effluents  
C.M.P.D.I.

5.5-9.0	10	100	250	30
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Jaswant



सीएमपीडीआई  
मिनी प्लान  
cmpdi  
Mini Plan

## Effluent Quality (All Parameter): - Basundhara Area

Project (OCP / UG)	Kulda OCP			MoEF-Sch-VI Standards
	Inlet of ETP	Final Outlet of ETP	Mine Sump Water near Kulda Nursery	
NAME OF THE STATION				
Date of Sampling	11-Nov-2025	11-Nov-2025	11-Nov-2025	
Odour	Unobjectionable	Unobjectionable	Unobjectionable	
Colour(Hazen)	4	2	2	
Temperature(°C)	23.4	23.6	23.5	Shall not exceed 5 °C above the receiving temperature
pH	8.54	8.60	8.32	5.5-9.0
Total Hardness (asCaCO <sub>3</sub> ),mg/L	198.11	169.81	234.50	-
Total Dissolved Solids, mg/L	356	317	396	-
Nitrate Nitrogen(mg/L)(As N)	5.69	0.55	6.56	10
Ammonical Nitrogen , mg/l (As N)	<0.20	<0.20	<0.20	50
Total Kjeldhal Nitrogen, mg/l (As N)	1.74	1.74	1.74	100
Sulphide (mg/L)	<0.10	<0.10	<0.10	2
BOD [3 days at 27°C] (mg/L)	3.4	3.1	2.3	30
Fluoride(mg/L)	0.79	1.65	1.21	2
Copper(mg/L)	<0.03	<0.03	<0.03	3
Manganese(mg/L)	0.32	0.35	0.11	2
Iron(mg/L)	<0.1	<0.1	<0.1	3
Zinc(mg/L)	0.09	0.05	0.03	5
Lead, mg/l	<0.005	<0.005	<0.005	0.1
Cadmium, mg/l	<0.001	<0.001	<0.001	2
Total Chromium(mg/L)	<0.01	<0.01	<0.01	2
Hexavalent Chromium(mg/L)	<0.05	<0.05	<0.05	0.1
Nickel(mg/L)	0.16	0.16	0.03	3
Arsenic, mg/l	<0.005	<0.005	<0.005	0.2
Selenium (mg/L)	<0.005	<0.005	<0.005	0.05
Dissolved Phosphate(mg/L)	<4.0	<4.0	<4.0	5
Phenolics (mg/L)	<0.001	<0.001	<0.001	1

*Hettaravik*  
Authorised Signatory  
CMPDI, RI-VII, LAB  
BHUBANESWAR

*Jarwal*



सीएमपीडीआई  
मिनी रल  
cmpdi  
Mini Ratna

## Surface Water Quality Data Basundhara Area

Project/OCF	Kulda OCP		IS:2296-1982 Tolerance for inland Surface water (Class C)
	Basundhara River near Bankibahal bridge as u/s water	Basundhara River near Barpali Village as d/s water	
NAME OF STATIONS			
Date of sampling	11-Nov-25	11-Nov-25	
pH	7.33	7.39	6.5-8.5
Color (Hazen unit)	1	2	300
Dissolved Oxygen(mg/L)	7.0	6.9	4
BOD (3 days 27°C)(mg/L)	2.3	2.4	3
Chlorides(mg/L)	7.73	11.65	600
Sulphate(mg/L)	29.46	34.19	400
Nitrate(mg/L)	3.80	4.57	50
Fluoride(mg/L)	0.30	0.52	1.5
Total Hardness(mg/L)	76.82	76.82	-
Total dissolved solids (mg/L)	136	159	1500
TSS(mg/L)	33	36	-
Copper(mg/L)	<0.03	<0.03	1.5
Iron(mg/L)	0.27	0.22	50
Zinc(mg/L)	<0.04	<0.04	15
Lead(mg/L)	<0.005	<0.005	0.1
Cadmium(mg/L)	<0.001	<0.001	0.01
Hexavalent Chromium(as Cr <sup>6+</sup> )(mg/L)	<0.05	<0.05	0.05
Arsenic(mg/L)	<0.005	<0.005	0.2
Selenium(mg/L)	<0.005	<0.005	0.05
Phenolics(mg/L)	<0.001	<0.001	0.005
Oil & Grease (mg/L)	<4.0	<4.0	0.1
Residual Free Chlorine(mg/L)	<0.2	<0.2	0.2
MPN (Index/100 ml)	110	120	-

*K. Hoffmann*  
Authorized Signatory  
CMPDI, N-VII, LAB  
BHUBANESWAR

*Janak*



सीएमपीडीआई  
मिनी रोल  
cmpdi  
Mini Roll

## Surface Water Quality Data Basundhara Area

Project/OCP	Kulda OCP			IS:2296-1982 Tolerance for inland Surface water (Class C)
NAME OF STATIONS	Chattanjhor nallah near Tumulia Village as u/s water	Chattanjhor nallah near Siarmal Village as d/s water	Kund Pond Water	
Date of sampling	11-Nov-25	11-Nov-25	11-Nov-25	
pH	6.98	6.92	6.46	6.5-8.5
Color (Hazen unit)	3	3	1	300
Dissolved Oxygen(mg/L)	7.1	7.0	6.8	4
BOD (3 days 27°C)(mg/L)	2.3	2.4	2.3	3
Chlorides(mg/L)	7.76	9.71	<4.0	600
Sulphate(mg/L)	12.83	16.48	9.59	400
Nitrate(mg/L)	<0.5	<0.5	<0.5	50
Fluoride(mg/L)	<0.30	0.37	<0.30	1.5
Total Hardness(mg/L)	40.43	64.69	24.25	-
Total dissolved solids (mg/L)	98	132	95	1500
TSS(mg/L)	28	36	24	-
Copper(mg/L)	<0.03	<0.03	<0.03	1.5
Iron(mg/L)	<0.1	<0.1	0.19	50
Zinc(mg/L)	<0.04	<0.04	<0.04	15
Lead(mg/L)	<0.005	<0.005	<0.005	0.1
Cadmium(mg/L)	<0.001	<0.001	<0.001	0.01
Hexavalent Chromium(as Cr <sup>6+</sup> )(mg/L)	<0.05	<0.05	<0.05	0.05
Arsenic(mg/L)	<0.005	<0.005	<0.005	0.2
Selenium(mg/L)	<0.005	<0.005	<0.005	0.05
Phenolics(mg/L)	<0.001	<0.001	<0.001	0.005
Oil & Grease (mg/L)	<4.0	<4.0	<4.0	0.1
Residual Free Chlorine(mg/L)	<0.2	<0.2	<0.2	0.2
MPN (Index/100 ml)	79	110	58	-

*K. K. K. K.*  
Authorized Signatory  
CMPDI, RI-VII, LAB  
BHUBANESWAR

*J. K. K.*



सीएमपीडीआई  
मिनी रत्न  
cmpdi  
Mini Ratna

## Surface Water Quality Data Basundhara Area

Project/OCP	Kulda OCP			IS:2296-1982 Tolerance for inland Surface water (Class C)
	Chattanjhor nallah near Tumulia Village as u/s water	Chattanjhor nallah near Siarmal Village as d/s water	Kund Pond Water	
NAME OF STATIONS				
Date of sampling	11-Nov-25	11-Nov-25	11-Nov-25	
pH	6.98	6.92	6.46	6.5-8.5
Color (Hazen unit)	3	3	1	300
Dissolved Oxygen(mg/L)	7.1	7.0	6.8	4
BOD (3 days 27°C)(mg/L)	2.3	2.4	2.3	3
Chlorides(mg/L)	7.76	9.71	<4.0	600
Sulphate(mg/L)	12.83	16.48	9.59	400
Nitrate(mg/L)	<0.5	<0.5	<0.5	50
Fluoride(mg/L)	<0.30	0.37	<0.30	1.5
Total Hardness(mg/L)	40.43	64.69	24.25	-
Total dissolved solids (mg/L)	98	132	95	1500
TSS(mg/L)	28	36	24	-
Copper(mg/L)	<0.03	<0.03	<0.03	1.5
Iron(mg/L)	<0.1	<0.1	0.19	50
Zinc(mg/L)	<0.04	<0.04	<0.04	15
Lead(mg/L)	<0.005	<0.005	<0.005	0.1
Cadmium(mg/L)	<0.001	<0.001	<0.001	0.01
Hexavalent Chromium(as Cr <sup>6+</sup> )(mg/L)	<0.05	<0.05	<0.05	0.05
Arsenic(mg/L)	<0.005	<0.005	<0.005	0.2
Selenium(mg/L)	<0.005	<0.005	<0.005	0.05
Phenolics(mg/L)	<0.001	<0.001	<0.001	0.005
Oil & Grease (mg/L)	<4.0	<4.0	<4.0	0.1
Residual Free Chlorine(mg/L)	<0.2	<0.2	<0.2	0.2
MPN (Index/100 ml)	79	110	58	-

*Hartanik*  
Authorised Signatory  
CMPDI, FI-VII, LAB  
BHUBANESWAR

*Jamat*

Kulda OCP

Legend  
Air Monitoring Locations

North of CHP, Teitelmal

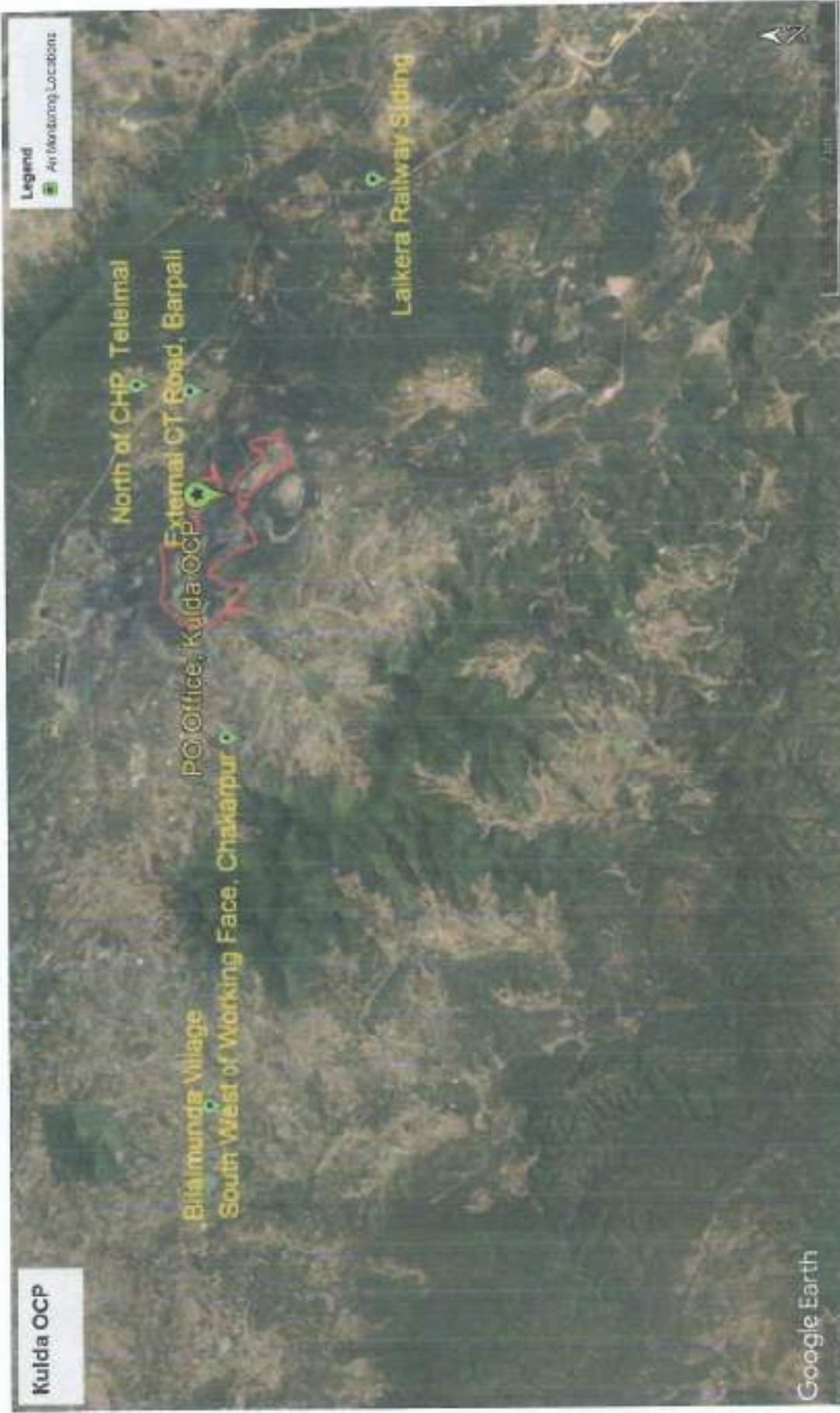
PG Office, Kulda OCP

Bilaimunda Village

South West of Working Face, Chakrapur

Lalkera Railway Siding

Google Earth



**Environmental Monitoring Report  
For  
December -2025**

**Project: Garjanbahal OCP  
Area: Basundhara  
Coalfield: Ib Valley**



**Mahanadi Coalfields Limited**



**Central Mine Planning & Design Institute Ltd.**  
(A Subsidiary of Coal India Ltd.)

**Regional Institute-VII, Samantpuri, P.O : RRL, Bhubaneswar-751013 (Odisha)**  
[Assistance from Environment Division, CMPDI(HQs), Ranchi ]

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Test Report



AMBIENT AIR QUALITY DATA

Area :

Basundhara

(Compliance Station)

Project :

Garjanbahal OCP

(conc. in  $\mu\text{g}/\text{cu.m.}$ )

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	CO (mg/m <sup>3</sup> )	Dust Generating Source	Distance from DGS
05-Dec-25	Karlikachar Village	284	165	70	10.63	12.86	-	External Coal Transportation Road	About 500m
05-Dec-25	KAN-1 Near Coal Sampling Lab	218	107	62	12.89	36.93	-	Railway Siding, Transportation	About 500m
05-Dec-25	Garjanbahal Village	224	111	63	9.58	27.40	-	External Coal Transportation Road	About 500m
26-Dec-25	Karlikachar Village	324	178	84	19.71	25.27	-	External Coal Transportation Road	About 500m
26-Dec-25	KAN-1 Near Coal Sampling Lab	293	189	79	12.18	38.63	-	Railway Siding, Transportation	About 500m
26-Dec-25	Garjanbahal Village	228	109	67	15.62	32.41	-	External Coal Transportation Road	About 500m

*Janak*

*Kattawalk*  
 Authorized Signatory  
 CMPDI, Bhubaneswar, LAB  
 BHUBANESWAR

Registration Notification dated 25th September, 2000

500	250		120	120	62 (8 Hours)
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AMBIENT AIR QUALITY DATA

Area :

Basundhara

(Reference Station)

Project :

Garjanbahal OCP

(conc. in  $\mu\text{g}/\text{cu.m.}$ )

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
01-Dec-25	West of working face, Bihaimunda	189	81	41	16.49	23.41	South-West of Working Face	About 500m
01-Dec-25	South-East of Working Face, Kutabaga Village	231	83	45	20.47	17.12	South-East of Working Face	About 1000m
02-Dec-25	South-East of Working Face, Kutabaga Village	225	74	42	20.16	26.24	South-East of Working Face	About 1000m
02-Dec-25	West of working face, Bihaimunda	205	79	44	15.96	20.36	South-West of Working Face	About 500m
08-Dec-25	South-East of Working Face, Kutabaga Village	216	81	48	21.33	21.46	South-East of Working Face	About 1000m
08-Dec-25	West of working face, Bihaimunda	182	78	40	9.02	17.73	South-West of Working Face	About 500m
09-Dec-25	South-East of Working Face, Kutabaga Village	241	82	47	10.76	31.21	South-East of Working Face	About 1000m
09-Dec-25	West of working face, Bihaimunda	227	85	47	20.04	38.59	South-West of Working Face	About 500m
16-Dec-25	South-East of Working Face, Kutabaga Village	196	83	45	25.56	30.46	South-East of Working Face	About 1000m
16-Dec-25	West of working face, Bihaimunda	193	81	44	15.48	24.20	South-West of Working Face	About 500m
17-Dec-25	South-East of Working Face, Kutabaga Village	211	85	48	20.27	31.70	South-East of Working Face	About 1000m
17-Dec-25	West of working face, Bihaimunda	226	84	49	17.16	26.83	South-West of Working Face	About 500m
22-Dec-25	West of working face, Bihaimunda	218	78	43	17.14	26.80	South-West of Working Face	About 500m
22-Dec-25	South-East of Working Face, Kutabaga Village	236	78	44	12.85	40.91	South-East of Working Face	About 1000m
23-Dec-25	South-East of Working Face, Kutabaga Village	235	84	46	17.05	35.46	South-East of Working Face	About 1000m
23-Dec-25	West of working face, Bihaimunda	218	82	45	17.17	26.86	South-West of Working Face	About 500m
29-Dec-25	South-East of Working Face, Kutabaga Village	232	79	44	21.86	41.03	South-East of Working Face	About 1000m
29-Dec-25	West of working face, Bihaimunda	201	81	41	15.78	24.68	South-West of Working Face	About 500m
30-Dec-25	West of working face, Bihaimunda	203	70	40	13.25	29.56	South-West of Working Face	About 500m
30-Dec-25	South-East of Working Face, Kutabaga Village	214	74	40	11.65	36.84	South-East of Working Face	About 1000m

Authorised Signatory  
CMPDI, RI-VII, LAB  
BHUBANESWAR

AN-1-QS, 2009

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*Janak*



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CMPD  
BHUANESWAR

Test Report

**AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)**

Area :

Basundhara

Project :

Garjanbahal OCP

Date of Sampling	Monitoring Station	Ammonia (NH <sub>3</sub> )	Ozone (O <sub>3</sub> )	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo(a)Pyrene	Benzene
		(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(mg/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(µg/m <sup>3</sup> )
01-Dec-25	West of working face, Bihaimunda	<20.0	21.80	<0.1	<1.0	<1.0	1.8	BQL(QL=0.7)	BQL
01-Dec-25	South-East of Working Face, Kutabaga Village	<20.0	23.73	<0.1	<1.0	<1.0	1.8	BQL(QL=0.7)	BQL
02-Dec-25	South-East of Working Face, Kutabaga Village	<20.0	19.37	<0.1	<1.0	<1.0	1.7	BQL(QL=0.7)	BQL
02-Dec-25	West of working face, Bihaimunda	<20.0	13.32	<0.1	<1.0	<1.0	1.7	BQL(QL=0.7)	BQL
08-Dec-25	South-East of Working Face, Kutabaga Village	<20.0	20.10	<0.1	<1.0	<1.0	1.6	BQL(QL=0.7)	BQL
08-Dec-25	West of working face, Bihaimunda	<20.0	16.72	<0.1	<1.0	<1.0	1.5	BQL(QL=0.7)	BQL
09-Dec-25	South-East of Working Face, Kutabaga Village	<20.0	12.60	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
09-Dec-25	West of working face, Bihaimunda	<20.0	19.87	<0.1	<1.0	<1.0	1.8	BQL(QL=0.7)	BQL
16-Dec-25	South-East of Working Face, Kutabaga Village	<20.0	12.12	<0.1	<1.0	<1.0	1.6	BQL(QL=0.7)	BQL
16-Dec-25	West of working face, Bihaimunda	<20.0	17.68	<0.1	<1.0	<1.0	1.8	BQL(QL=0.7)	BQL
17-Dec-25	South-East of Working Face, Kutabaga Village	<20.0	10.42	<0.1	<1.0	<1.0	1.7	BQL(QL=0.7)	BQL
17-Dec-25	West of working face, Bihaimunda	<20.0	17.43	<0.1	<1.0	<1.0	1.5	BQL(QL=0.7)	BQL
22-Dec-25	West of working face, Bihaimunda	<20.0	20.10	<0.1	<1.0	<1.0	1.7	BQL(QL=0.7)	BQL
22-Dec-25	South-East of Working Face, Kutabaga Village	<20.0	21.55	<0.1	<1.0	<1.0	1.6	BQL(QL=0.7)	BQL
23-Dec-25	South-East of Working Face, Kutabaga Village	<20.0	17.43	<0.1	<1.0	<1.0	1.8	BQL(QL=0.7)	BQL
23-Dec-25	West of working face, Bihaimunda	<20.0	11.87	<0.1	<1.0	<1.0	1.5	BQL(QL=0.7)	BQL
29-Dec-25	South-East of Working Face, Kutabaga Village	<20.0	13.08	<0.1	<1.0	<1.0	1.5	BQL(QL=0.7)	BQL
29-Dec-25	West of working face, Bihaimunda	<20.0	19.37	<0.1	<1.0	<1.0	1.6	BQL(QL=0.7)	BQL
30-Dec-25	West of working face, Bihaimunda	<20.0	16.95	<0.1	<1.0	<1.0	1.6	BQL(QL=0.7)	BQL
30-Dec-25	South-East of Working Face, Kutabaga Village	<20.0	14.53	<0.1	<1.0	<1.0	1.7	BQL(QL=0.7)	BQL

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 Authorized Signatory  
 CMPDI, VI, LAB  
 BHUANESWAR

400(24 hours)	180(hour)	1.0(24 hours)	6.0(Annual)	20(Annual)	02(3 hours)	01(annual)	05(annual)
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 TRUE BY  
**cmpdi**  
 सर्वोत्तम

TABLE-

**NOISE LEVEL MONITORING DATA**

AREA :

Basundhara

PROJECT :

Garjunbahal OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
13-Dec-25	Garjunbahal Village	52.8	42.6
13-Dec-25	Karlikachar Village	50.3	41.4
29-Dec-25	Garjunbahal Village	49.6	42.3
29-Dec-25	Karlikachar Village	50.1	40.7

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**Authorized Signatory**  
**CMPDI, P.I. VII, LAB**  
**BHASKAR ANESWAR**

MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 75dB(A) (Industrial)	10.00 PM -6.00 AM Leq 70dB(A) (Industrial)
MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 55dB(A) (Residential)	10.00 PM -6.00 AM Leq 45dB(A) (Residential)
MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 65dB(A) (Commercial)	10.00 PM -6.00 AM Leq 55dB(A) (Commercial)
MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 50dB(A) (Silence Zone)	10.00 PM -6.00 AM Leq 40dB(A) (Silence Zone)

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**EFFLUENT QUALITY DATA**

Area :

Basundhara

(All dimensions are in mg/l unless otherwise stated except pH)

Project :

Garjanbahal OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	TDS	DO	Remarks
13-Dec-25	Mine Sump Water	7.34	<4.0	25	20	-	-	-	
13-Dec-25	Inlet of Settling Tank (Kanika Siding)	8.00	5.8	88	128	-	-	-	
13-Dec-25	Outlet of Settling Tank (Kanika Siding)	7.82	5.2	79	108	-	-	-	
30-Dec-25	Inlet of Settling Tank (Kanika Siding)	6.54	6.2	92	148	-	-	-	
30-Dec-25	Mine Sump Water	6.54	<4.0	29	28	-	-	-	
30-Dec-25	Outlet of Settling Tank (Kanika Siding)	7.90	4.8	53	88	-	-	-	

K. Attawalk  
 MoEF Signatory  
 MoEF Laboratory  
 MoEF Schedule III, General standard for discharge of Environmental Pollutants Part A: Effluents

5.5-9.0	10	100	250	30
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Jasrat



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मिनी रॉल  
cmpdi  
Mini Rolia

## Effluent Quality (All Parameter): - Basundhara Area

Project (OCP / UG)	Garjhanbahal OCP			MoEF-Sch-VI Standards
	Outlet of Settling tank (Kanika Siding)	Inlet of Settling tank (Kanika Siding)	Mine Sump Water	
NAME OF THE STATION				
Date of Sampling	11-Nov-2025	11-Nov-2025	11-Nov-2025	
Odour	Unobjectionable	Unobjectionable	Unobjectionable	
Colour(Hazen)	2	3	2	
Temperature(°C)	24.5	24.0	23.4	Shall not exceed 5 °C above the receiving temperature
pH	7.83	7.80	8.38	5.5-9.0
Total Hardness (asCaCO <sub>3</sub> ),mg/L	44.47	1431.29	1354.47	-
Total Dissolved Solids, mg/L	118	1624	1531	-
Nitrate Nitrogen(mg/L)(As N)	0.32	1.75	0.57	10
Ammonical Nitrogen , mg/l (As N)	<0.20	<0.20	<0.20	50
Total Kjeldhal Nitrogen, mg/l (As N)	1.74	1.74	1.74	100
Sulphide (mg/L)	<0.10	<0.10	<0.10	2
BOD [3 days at 27°C] (mg/L)	2.6	2.7	2.5	30
Fluoride(mg/L)	<0.30	<0.30	1.34	2
Copper(mg/L)	<0.03	<0.03	<0.03	3
Manganese(mg/L)	0.10	0.08	0.06	2
Iron(mg/L)	0.13	<0.1	<0.1	3
Zinc(mg/L)	0.04	<0.04	<0.04	5
Lead, mg/l	<0.005	<0.005	<0.005	0.1
Cadmium, mg/l	<0.001	<0.001	<0.001	2
Total Chromium(mg/L)	<0.01	<0.01	<0.01	2
Hexavalent Chromium(mg/L)	<0.05	<0.05	<0.05	0.1
Nickel(mg/L)	0.05	0.04	0.04	3
Arsenic, mg/l	<0.005	<0.005	<0.005	0.2
Selenium (mg/L)	<0.005	<0.005	<0.005	0.05
Dissolved Phosphate(mg/L)	<4.0	<4.0	<4.0	5
Phenolics (mg/L)	<0.001	<0.001	<0.001	1

*Hattarwal*  
Authorised Signatory  
CMPDI RI-VII, LAB  
BHUBANESWAR

*Jasmati*



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मिनि रत्ना  
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Mini Ratna

## Surface Water Quality Data Basundhara Area

Project/OCP	Garjanbahal			IS:2296-1982 Tolerance for Inland Surface Water (Class C)
	Basundhara River near Bandhpali Village as d/s water	Basundhara River near Bankibahal bridge as u/s of Duduka (Reported)	Basundhara River near Barpali Village as d/s water (Reported Only)	
NAME OF STATIONS				
Date of sampling	11-Nov-25	11-Nov-25	11-Nov-25	
pH	6.97	7.33	7.39	6.5-8.5
Color (Hazen unit)	2	1	2	300
Dissolved Oxygen(mg/L)	6.8	7.0	6.9	4
BOD (3 days 27°C)(mg/L)	2.2	2.3	2.4	3
Chlorides(mg/L)	5.82	7.73	11.65	600
Sulphate(mg/L)	13.37	29.46	34.19	400
Nitrate(mg/L)	<0.5	3.80	4.57	50
Fluoride(mg/L)	<0.30	0.30	0.52	1.5
Total Hardness(mg/L)	16.17	76.82	76.82	-
Total dissolved solids (mg/L)	92	136	159	1500
TSS(mg/L)	26	33	36	-
Copper(mg/L)	<0.03	<0.03	<0.03	1.5
Iron(mg/L)	0.12	0.27	0.22	50
Zinc(mg/L)	<0.04	<0.04	<0.04	15
Lead(mg/L)	<0.005	<0.005	<0.005	0.1
Cadmium(mg/L)	<0.001	<0.001	<0.001	0.01
Hexavalent Chromium(as Cr <sup>6+</sup> )(mg/L)	<0.05	<0.05	<0.05	0.05
Arsenic(mg/L)	<0.005	<0.005	<0.005	0.2
Selenium(mg/L)	<0.005	<0.005	<0.005	0.05
Phenolics(mg/L)	<0.001	<0.001	<0.001	0.005
Oil & Grease (mg/L)	<4.0	<4.0	<4.0	0.1
Residual Free Chlorine(mg/L)	<0.2	<0.2	<0.2	0.2
MPN (Index/100 ml)	130	110	120	-

*Fattanwar*  
Authorised Signatory  
CMPDI RI-VII, LAB  
BHUSAVESWAR

*Jaswanti*

Garjanbahal OCP

Legend  
Monitoring Station



**Environmental Monitoring Report  
For  
December -2025**

**Project: Integrated LBL OCP  
Area: Lakhanpur  
Coalfield: Ib Valley**



**Mahanadi Coalfields Limited**



**सीएमपीडीआई**  
मिनि रात्रा  
**cmpdi**  
Mini Ratna

**Central Mine Planning & Design Institute Ltd.**  
(A Subsidiary of Coal India Ltd.)

**Regional Institute-VII, Samantpuri, P.O : RRL, Bhubaneswar-751013 (Odisha)**  
[Assistance from Environment Division, CMPDI(HQs), Ranchi ]

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CMPDI  
भारत

Test Report

**AMBIENT AIR QUALITY DATA**

Area :

Lakhanpur

(Compliance Station)

Project :

LBL OCP

(conc. in  $\mu\text{g}/\text{cu.m.}$ )

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	CO (mg/m <sup>3</sup> )	Dust Generating Source	Distance from DGS
06-Dec-25	West of Lakhanpur Quarry Near Solada	297	183	74	10.88	33.37	1.5	Mining Activities	About 500m
06-Dec-25	Kiruibal Village	273	178	69	12.10	24.20	1.4	Mining Activities	About 500m
06-Dec-25	BOCM Workshop	314	170	76	14.57	24.00	1.4	Mining Activities	About 500m
06-Dec-25	Lilari Magazine House	285	193	77	10.75	24.47	1.7	Coal Transportation	About 500m
27-Dec-25	West of Lakhanpur Quarry Near Solada	296	169	78	16.30	25.48	1.1	Mining Activities	About 500m
27-Dec-25	Kiruibal Village	281	187	76	12.99	38.68	1.2	Mining Activities	About 500m
27-Dec-25	BOCM Workshop	278	195	80	13.44	27.90	1.6	Mining Activities	About 500m
27-Dec-25	Lilari Magazine House	275	169	74	12.81	38.19	1.4	Coal Transportation	About 500m

*Hattanik*  
Authorized Signatory  
CMPDI, FI-VII, LAB  
BHUBANESWAR

MoEF Standards Notification dated 25th  
September, 2000

500

250

120

120

02(8  
Hours)

*Jenani*



**AMBIENT AIR QUALITY DATA**

Area : **Lakhanpur**

(Reference Station)

Project :

**LBL OCP**

(conc. in  $\mu\text{g}/\text{cu.m.}$ )

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
03-Dec-25	Bartap Village North West of Mine	207	83	47	9.41	35.41	Domestic Anthropogenic Source	About 2km
03-Dec-25	Ardhapara Village South East of Mine	186	75	39	10.25	43.20	Transportation	About 1000m
03-Dec-25	Gumadera Village North of Mine	218	86	47	19.60	34.68	Domestic Source and Mining Activities	About 3km
03-Dec-25	Barihapali Village South West of Mine	185	72	38	17.79	38.57	Domestic Anthropogenic Source	About 1.6km
03-Dec-25	Lakhanpur Police Station West of Mine	204	81	40	12.45	22.09	Mining Activities	About 1.6km
03-Dec-25	Ramada Village South of Mine	218	86	44	15.94	18.63	Domestic Anthropogenic Source	About 2Km
03-Dec-25	Kadam Rehab Centre East of Mine	209	89	48	15.24	22.69	Mining Activities	About 2km
04-Dec-25	Kadam Rehab Centre East of Mine	225	79	41	13.44	34.10	Mining Activities	About 2km
04-Dec-25	Lakhanpur Police Station West of Mine	219	84	46	13.44	39.28	Mining Activities	About 1.6km
04-Dec-25	Bartap Village North West of Mine	220	88	50	18.67	11.47	Domestic Anthropogenic Source	About 2km
04-Dec-25	Gumadera Village North of Mine	240	95	51	22.47	24.34	Domestic Source and Mining Activities	About 3km
04-Dec-25	Barihapali Village South West of Mine	215	86	49	12.04	22.82	Domestic Anthropogenic Source	About 1.6km
04-Dec-25	Ramada Village South of Mine	233	90	49	14.28	28.08	Domestic Anthropogenic Source	About 2Km
04-Dec-25	Ardhapara Village South East of Mine	198	78	43	11.12	20.04	Transportation	About 1000m
10-Dec-25	Kadam Rehab Centre East of Mine	201	83	42	21.19	34.41	Mining Activities	About 2km
10-Dec-25	Lakhanpur Police Station West of Mine	223	87	48	11.00	33.88	Mining Activities	About 1.6km
10-Dec-25	Gumadera Village North of Mine	206	78	43	12.96	32.77	Domestic Source and Mining Activities	About 3km
10-Dec-25	Ramada Village South of Mine	217	96	43	9.66	16.27	Domestic Anthropogenic Source	About 2Km
10-Dec-25	Bartap Village North West of Mine	194	75	41	20.29	19.18	Domestic Anthropogenic Source	About 2km
10-Dec-25	Barihapali Village South West of Mine	192	74	41	15.66	28.07	Domestic Anthropogenic Source	About 1.6km
10-Dec-25	Ardhapara Village South East of Mine	190	80	41	10.31	39.57	Transportation	About 1000m
11-Dec-25	Ramada Village South of Mine	220	88	48	14.39	28.30	Domestic Anthropogenic Source	About 2Km

Authorised Signatory  
CMPDI, KI-VII, LAB  
BHUBANESWAR

	100	60	80	80
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*Jenab*

Project :

LBL OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
11-Dec-25	Kadam Rehab Centre East of Mine	214	87	46	13.13	34.43	Mining Activities	About 2km
11-Dec-25	Bartap Village North West of Mine	196	77	43	13.70	13.11	Domestic Anthropogenic Source	About 2km
11-Dec-25	Barihapali Village South West of Mine	203	80	45	16.48	30.70	Domestic Anthropogenic Source	About 1.6km
11-Dec-25	Lakhanpur Police Station West of Mine	206	89	42	12.73	38.58	Mining Activities	About 1.6km
11-Dec-25	Ardhapara Village South East of Mine	210	84	47	11.92	33.35	Transportation	About 1000m
11-Dec-25	Gumadera Village North of Mine	194	89	49	19.23	29.90	Domestic Source and Mining Activities	About 3km
18-Dec-25	Bartap Village North West of Mine	212	85	49	10.24	36.40	Domestic Anthropogenic Source	About 2km
18-Dec-25	Ardhapara Village South East of Mine	188	73	41	12.39	29.53	Transportation	About 1000m
18-Dec-25	Gumadera Village North of Mine	198	81	44	12.39	22.89	Domestic Source and Mining Activities	About 3km
18-Dec-25	Barihapali Village South West of Mine	189	73	41	13.31	23.87	Domestic Anthropogenic Source	About 1.6km
18-Dec-25	Lakhanpur Police Station West of Mine	218	86	49	13.94	37.64	Mining Activities	About 1.6km
18-Dec-25	Ramada Village South of Mine	213	85	47	19.24	21.61	Domestic Anthropogenic Source	About 2Km
18-Dec-25	Kadam Rehab Centre East of Mine	226	90	52	15.57	34.45	Mining Activities	About 2km
19-Dec-25	Kadam Rehab Centre East of Mine	248	93	56	14.54	22.05	Mining Activities	About 2km
19-Dec-25	Lakhanpur Police Station West of Mine	190	80	45	11.09	18.82	Mining Activities	About 1.6km
19-Dec-25	Bartap Village North West of Mine	227	91	53	12.23	40.35	Domestic Anthropogenic Source	About 2km
19-Dec-25	Gumadera Village North of Mine	219	90	51	12.35	14.57	Domestic Source and Mining Activities	About 3km
19-Dec-25	Barihapali Village South West of Mine	221	88	52	14.65	27.32	Domestic Anthropogenic Source	About 1.6km
19-Dec-25	Ramada Village South of Mine	234	91	50	18.68	18.36	Domestic Anthropogenic Source	About 2Km
19-Dec-25	Ardhapara Village South East of Mine	205	80	46	9.44	24.99	Transportation	About 1000m
24-Dec-25	Kadam Rehab Centre East of Mine	220	87	51	20.91	17.99	Mining Activities	About 2km
24-Dec-25	Ramada Village South of Mine	218	88	49	13.23	18.36	Domestic Anthropogenic Source	About 2Km
24-Dec-25	Lakhanpur Police Station West of Mine	221	89	50	16.23	35.45	Mining Activities	About 1.6km
24-Dec-25	Gumadera Village North of Mine	196	77	43	12.71	21.52	Domestic Source and Mining Activities	About 3km
24-Dec-25	Bartap Village North West of Mine	196	76	43	15.39	43.34	Domestic Anthropogenic Source	About 2km

Signature  
 Authorized Signatory  
 C.M.F.D.I., RI-VII, LAB  
 BHUBANESWAR

	100	60	80	80
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Signature

**Project :****LBL OCP****(conc. in  $\mu\text{g}/\text{cu.m.}$ )**

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
24-Dec-25	Barihapali Village South West of Mine	195	75	43	14.75	23.88	Domestic Anthropogenic Source	About 1.6km
24-Dec-25	Ardhapara Village South East of Mine	194	75	43	11.08	35.02	Transportation	About 1000m
25-Dec-25	Ramada Village South of Mine	236	90	52	14.72	21.71	Domestic Anthropogenic Source	About 2Km
25-Dec-25	Kadam Rehab Centre East of Mine	213	85	49	15.79	31.04	Mining Activities	About 2km
25-Dec-25	Bartap Village North West of Mine	203	85	46	13.14	32.49	Domestic Anthropogenic Source	About 2km
25-Dec-25	Barihapali Village South West of Mine	208	82	48	13.16	15.52	Domestic Anthropogenic Source	About 1.6km
25-Dec-25	Lakhanpur Police Station West of Mine	196	93	52	15.88	19.87	Mining Activities	About 1.6km
25-Dec-25	Ardhapara Village South East of Mine	219	87	50	13.50	30.97	Transportation	About 1000m
25-Dec-25	Gumadera Village North of Mine	207	84	45	12.13	38.46	Domestic Source and Mining Activities	About 3km

*Jattanaik*  
 Authorised Signatory  
 CMPDI, RI-VII, LAB  
 BHUBANESWAR

\*N.1105.2009

	100	80	80	80
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*Janaki*



सीएमपीडीआई  
C.M.P.D.I.  
Central Monitoring and Pollution Data Institute

Test Report

**AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)**

Area :

Lakhanpur

Project :

LBL OCP

Date of Sampling	Monitoring Station	Ammonia (NH <sub>3</sub> )	Ozone (O <sub>3</sub> )	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo(a)Pyrene	Benzene
		(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(mg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )
03-Dec-25	Gumadera Village North of Mine	<20.0	27.37	<0.1	<1.0	<1.0	1.5	BQL(QL=0.7)	BQL
03-Dec-25	Kadam Rehab Centre East of Mine	<20.0	24.47	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
03-Dec-25	Ramada Village South of Mine	<20.0	15.02	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
03-Dec-25	Lakhanpur Police Station West of Mine	<20.0	11.62	<0.1	<1.0	<1.0	1.6	BQL(QL=0.7)	BQL
03-Dec-25	Bartap Village North West of Mine	<20.0	18.17	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
03-Dec-25	Ardhapara Village South East of Mine	<20.0	16.72	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
03-Dec-25	Barihapali Village South West of Mine	<20.0	26.15	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
04-Dec-25	Barihapali Village South West of Mine	<20.0	15.02	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
04-Dec-25	Bartap Village North West of Mine	<20.0	27.37	<0.1	<1.0	<1.0	1.8	BQL(QL=0.7)	BQL
04-Dec-25	Gumadera Village North of Mine	<20.0	23.25	<0.1	<1.0	<1.0	1.6	BQL(QL=0.7)	BQL
04-Dec-25	Ramada Village South of Mine	<20.0	10.42	<0.1	<1.0	<1.0	1.8	BQL(QL=0.7)	BQL
04-Dec-25	Lakhanpur Police Station West of Mine	<20.0	25.67	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
04-Dec-25	Ardhapara Village South East of Mine	<20.0	18.65	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
04-Dec-25	Kadam Rehab Centre East of Mine	<20.0	20.58	<0.1	<1.0	<1.0	1.6	BQL(QL=0.7)	BQL
10-Dec-25	Barihapali Village South West of Mine	<20.0	12.35	<0.1	<1.0	<1.0	1.5	BQL(QL=0.7)	BQL
10-Dec-25	Bartap Village North West of Mine	<20.0	10.90	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
10-Dec-25	Ramada Village South of Mine	<20.0	20.58	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
10-Dec-25	Ardhapara Village South East of Mine	<20.0	13.80	<0.1	<1.0	<1.0	1.8	BQL(QL=0.7)	BQL
10-Dec-25	Gumadera Village North of Mine	<20.0	12.83	<0.1	<1.0	<1.0	1.7	BQL(QL=0.7)	BQL
10-Dec-25	Lakhanpur Police Station West of Mine	<20.0	21.80	<0.1	<1.0	<1.0	1.8	BQL(QL=0.7)	BQL
10-Dec-25	Kadam Rehab Centre East of Mine	<20.0	17.43	<0.1	<1.0	<1.0	1.8	BQL(QL=0.7)	BQL
11-Dec-25	Ardhapara Village South East of Mine	<20.0	23.73	<0.1	<1.0	<1.0	1.6	BQL(QL=0.7)	BQL
11-Dec-25	Barihapali Village South West of Mine	<20.0	26.40	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL

Standard Signatory  
C.M.P.D.I., BL-VII, LAB  
BHUBANESWAR

400(24 hours)	180(hours)	1.0(24 hours)	6.0(Annual)	20(Annual)	02(8 hours)	01(annual)	05(annual)
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Janak

Project :

LBL OCP

Date of Sampling	Monitoring Station	Ammonia(NH3)	Ozone(O3)	Lead(Pb)	Arsenic(As)	Nickel(Ni)	CO	Benzo(a)Pyrene	Benzene
		(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(mg/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(µg/m <sup>3</sup> )
11-Dec-25	Gumadera Village North of Mine	<20.0	26.40	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
11-Dec-25	Lakhanpur Police Station West of Mine	<20.0	20.83	<0.1	<1.0	<1.0	1.8	BQL(QL=0.7)	BQL
11-Dec-25	Bartap Village North West of Mine	<20.0	20.58	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
11-Dec-25	Kadam Rehab Centre East of Mine	<20.0	22.52	<0.1	<1.0	<1.0	1.7	BQL(QL=0.7)	BQL
11-Dec-25	Ramada Village South of Mine	<20.0	12.12	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
16-Dec-25	Kadam Rehab Centre East of Mine	<20.0	22.03	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
16-Dec-25	Lakhanpur Police Station West of Mine	<20.0	16.47	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
17-Dec-25	Lakhanpur Police Station West of Mine	<20.0	20.35	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
18-Dec-25	Gumadera Village North of Mine	<20.0	25.67	<0.1	<1.0	<1.0	1.7	BQL(QL=0.7)	BQL
18-Dec-25	Ramada Village South of Mine	<20.0	15.98	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
18-Dec-25	Ardhapara Village South East of Mine	<20.0	14.28	<0.1	<1.0	<1.0	1.8	BQL(QL=0.7)	BQL
18-Dec-25	Bartap Village North West of Mine	<20.0	23.00	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
18-Dec-25	Barihapali Village South West of Mine	<20.0	27.12	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
19-Dec-25	Barihapali Village South West of Mine	<20.0	26.40	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
19-Dec-25	Bartap Village North West of Mine	<20.0	22.77	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
19-Dec-25	Gumadera Village North of Mine	<20.0	14.53	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
19-Dec-25	Ramada Village South of Mine	<20.0	14.28	<0.1	<1.0	<1.0	1.7	BQL(QL=0.7)	BQL
19-Dec-25	Ardhapara Village South East of Mine	<20.0	14.77	<0.1	<1.0	<1.0	1.6	BQL(QL=0.7)	BQL
19-Dec-25	Kadam Rehab Centre East of Mine	<20.0	20.35	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
24-Dec-25	Barihapali Village South West of Mine	<20.0	10.65	<0.1	<1.0	<1.0	1.7	BQL(QL=0.7)	BQL
24-Dec-25	Ardhapara Village South East of Mine	<20.0	22.28	<0.1	<1.0	<1.0	1.5	BQL(QL=0.7)	BQL
24-Dec-25	Bartap Village North West of Mine	<20.0	27.37	<0.1	<1.0	<1.0	1.7	BQL(QL=0.7)	BQL
24-Dec-25	Ramada Village South of Mine	<20.0	26.15	<0.1	<1.0	<1.0	1.8	BQL(QL=0.7)	BQL
24-Dec-25	Gumadera Village North of Mine	<20.0	23.73	<0.1	<1.0	<1.0	1.6	BQL(QL=0.7)	BQL
24-Dec-25	Lakhanpur Police Station West of Mine	<20.0	17.20	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
24-Dec-25	Kadam Rehab Centre East of Mine	<20.0	15.98	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
25-Dec-25	Ardhapara Village South East of Mine	<20.0	24.22	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL

Standard	400(24 hours)	180(hours)	1.0(24 hours)	6.0(Annual)	20(Annual)	02(8 hours)	01(annual)	05(annual)
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*H. S. Sankar*  
 Authorised Signatory  
 CMPDI, RI-VII, LAB  
 BHUBANESWAR

*J. Sankar*

**Project :**

**LBL OCP**

Date of Sampling	Monitoring Station	Ammonia(NH3)	Ozone(O3)	Lead(Pb)	Arsenic(As)	Nickel(Ni)	CO	Benzo(a)Pyrene	Benzene
		(µg/m3)	(µg/m3)	(µg/m3)	(ng/m3)	(ng/m3)	(mg/m3)	(ng/m3)	(µg/m3)
25-Dec-25	Barihapali Village South West of Mine	<20.0	20.10	<0.1	<1.0	<1.0	1.7	BQL(QL=0.7)	BQL
25-Dec-25	Gumadra Village North of Mine	<20.0	23.48	<0.1	<1.0	<1.0	1.7	BQL(QL=0.7)	BQL
25-Dec-25	Lakhanpur Police Station West of Mine	<20.0	13.08	<0.1	<1.0	<1.0	1.8	BQL(QL=0.7)	BQL
25-Dec-25	Bartap Village North West of Mine	<20.0	19.37	<0.1	<1.0	<1.0	1.7	BQL(QL=0.7)	BQL
25-Dec-25	Kadam Rehab Centre East of Mine	<20.0	10.65	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
25-Dec-25	Ramada Village South of Mine	<20.0	23.25	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL

*Hattanaik*

Authorised Signatory  
C/POI, RI-VII, LAB  
Bhubaneswar

**Standard**

400(24 hours)	180(hour)	1.0(24 hours)	6.0(Annual)	20(Annual)	02(8 hours)	01(annual)	05(annual)
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*Januar*



सीएमपीडी  
cmpdi  
MAHARASHTRA

TABLE--

**NOISE LEVEL MONITORING DATA**

AREA :

Lakhanpur

PROJECT :

LBL OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
12-Dec-25	BOCM Workshop	52.9	41.6
12-Dec-25	Ardhapara Village South East of Mine	49.6	41.3
12-Dec-25	Gumadera Village North of Mine	50.6	42.3
12-Dec-25	Kadam Rehab Centre East of Mine	49.1	40.6
12-Dec-25	Bartap Village North West of Mine	50.9	39.6
12-Dec-25	Kirulbai Village	50.6	39.3
12-Dec-25	West of Lakhanpur Quarry Near Solada	50.7	42.9
12-Dec-25	Near Lilari Magazine House	56.4	44.8
12-Dec-25	Lakhanpur Police Station West of Mine	52.8	41.5
12-Dec-25	Ramada Village South of Mine	52.4	40.7
12-Dec-25	Barihapali Village South West of Mine	49.6	41.5
27-Dec-25	Near Lilari Magazine House	59.8	53.4
27-Dec-25	Barihapali Village South West of Mine	52.8	39.6
27-Dec-25	Ardhapara Village South East of Mine	49.9	40.5
27-Dec-25	Kirulbai Village	49.2	42.6
27-Dec-25	Gumadera Village North of Mine	52.3	40.8
27-Dec-25	West of Lakhanpur Quarry Near Solada	50.6	41.3
27-Dec-25	Bartap Village North West of Mine	50.4	42.2
27-Dec-25	Ramada Village South of Mine	51.6	40.2
27-Dec-25	Lakhanpur Police Station West of Mine	58.9	54.6
27-Dec-25	BOCM Workshop	60.7	54.9
27-Dec-25	Kadam Rehab Centre East of Mine	49.2	39.8

MoEF Standard Notification dated 25th September, 2000

6.00 AM - 10.00 PM

Leq 75dB(A)  
(Industrial)

10.00 PM - 6.00 AM

Leq 70dB(A)  
(Industrial)

MoEF Standard Notification dated 25th September, 2000

6.00 AM - 10.00 PM

Leq 55dB(A)  
(Residential)

10.00 PM - 6.00 AM

Leq 45dB(A)  
(Residential)

MoEF Standard Notification dated 25th September, 2000

6.00 AM - 10.00 PM

Leq 65dB(A)  
(Commercial)

10.00 PM - 6.00 AM

Leq 55dB(A)  
(Commercial)

MoEF Standard Notification dated 25th September, 2000

6.00 AM - 10.00 PM

Leq 50dB(A)  
(Silence Zone)

10.00 PM - 6.00 AM

Leq 40dB(A)  
(Silence Zone)

*T. J. J. J.*  
Authorised Signatory  
CMA-DI, RI-VII, LAB  
BILBAWESWAR

*J. J. J.*

**EFFLUENT QUALITY DATA**

Area :

Lakhanpur

(All dimensions are in mg/l unless otherwise stated except pH)

Project :

LBL OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	TDS	DO	Remarks
15-Dec-25	Mine Sump Water, Lakhanpur	6.12	<4.0	31	24	-	-	-	
15-Dec-25	Mine Sump Water, Belpahar	6.09	<4.0	34	24	-	-	-	
15-Dec-25	Inlet of ETP, Lakhanpur	6.60	4.6	43	88	-	-	-	
15-Dec-25	Outlet of ETP, Lakhanpur	7.02	<4.0	32	28	-	-	-	
15-Dec-25	Outlet of ETP, Belpahar	6.97	<4.0	21	16	-	-	-	
15-Dec-25	Mine Sump Water, Lilari	6.18	<4.0	26	20	-	-	-	
15-Dec-25	Inlet of ETP, Belpahar	6.88	<4.0	38	44	-	-	-	
31-Dec-25	Inlet of ETP, Lakhanpur	6.88	4.2	39	48	-	-	-	
31-Dec-25	Outlet of ETP, Lakhanpur	6.91	<4.0	25	20	-	-	-	
31-Dec-25	Outlet of ETP, Belpahar	6.80	<4.0	27	24	-	-	-	
31-Dec-25	Inlet of ETP, Belpahar	6.79	4.6	43	60	-	-	-	

*Haffanick*  
 Authorised Signatory  
 Cmpdi No. VI, LAB  
 BILGANESWAR

MoEF Standard Notification dated 25th September, 2000 and MoEF Schedule VI, General standard for discharge of Environmental Pollutants Part A: Effluents	5.5-9.0	10	100	250	30
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*Jamshet*



सीएमपीडी आई  
CMPDI  
भारत सरकार

TABLE-

**EFFLUENT QUALITY DATA**

Area :

Lakhanpur

(All dimensions are in mg/l unless otherwise stated except pH)

Project :

LBL OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	TDS	DO	MPN/100mL
15-Dec-25	Clear Water Tank of Sewage Treatment Plant	6.77	-	22	-	<2.0	-	-	130
15-Dec-25	STP Inlet	7.33	-	36	-	2.8	-	-	280
31-Dec-25	STP Inlet	7.11	-	39	-	3.1	-	-	240
31-Dec-25	Clear Water Tank of Sewage Treatment Plant	7.32	-	26	-	<2.0	-	-	150

*Tattanaik*  
Authorised Signatory  
CMPDI, RI-VII, LAB  
BHUBANESWAR

G.S.R. 126 5(E) Effluent discharge standards (applicable to all mode of disposal), Sewage Treatment Plants (STPs)	6.5-9.5	-	<100	-	30	-	<1000
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*Jamati*



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## Effluent Quality (all Parameter) :- Lakhanpur Area

Project (OCP / UG)	LBL			MoEF-Sch-VI Standards
	Mine Sump Water (Lakhanpur)	Mine Sump Water (Belpahar)	Mine Sump Water (Lilari)	
NAME OF THE STATION				
Date of Sampling	14-Nov-2025	14-Nov-2025	14-Nov-2025	
Odour	Unobjectionable	Unobjectionable	Unobjectionable	
Colour(Hazen)	2	2	4	
Temperature(°C)	23.6	24.7	23.9	Shall not exceed 5 °C above the receiving temperature
pH	6.68	6.82	6.82	5.5-9.0
Total Hardness (asCaCO <sub>3</sub> ),mg/L	606.48	517.52	590.30	-
Total Dissolved Solids, mg/L	786	689	782	-
Nitrate Nitrogen(mg/L)(As N)	3.96	3.77	3.87	10
Ammonical Nitrogen , mg/l (As N)	4.35	<0.20	<0.20	50
Total Kjeldhal Nitrogen, mg/l (As N)	12.21	1.74	1.74	100
Sulphide (mg/L)	<0.10	<0.10	<0.10	2
BOD [3 days at 27°C] (mg/L)	3.6	3.4	3.2	30
Fluoride(mg/L)	0.51	0.74	0.72	2
Copper(mg/L)	<0.03	<0.03	<0.03	3
Manganese(mg/L)	2.49	2.44	2.52	2
Iron(mg/L)	<0.1	<0.1	<0.1	3
Zinc(mg/L)	0.47	0.45	0.47	5
Lead, mg/l	<0.005	<0.005	<0.005	0.1
Cadmium, mg/l	<0.001	<0.001	<0.001	2
Total Chromium(mg/L)	<0.01	<0.01	<0.01	2
Hexavalent Chromium(mg/L)	<0.05	<0.05	<0.05	0.1
Nickel(mg/L)	0.21	1.22	1.35	3
Arsenic, mg/l	<0.005	<0.005	<0.005	0.2
Selenium (mg/L)	<0.005	<0.005	<0.005	0.05
Dissolved Phosphate(mg/L)	<4.0	<4.0	<4.0	5
Phenolics (mg/L)	<0.001	<0.001	<0.001	1

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## Surface Water Quality Data Lakhanpur Area

Project/OCP	LBL OCP				IS:2296-1982 Tolerance for inland Surface water (Class C)
	Pulijhor Stream Near Tingismal Village (u/s of Lakhanpur OCP)	Pulijhor Stream Near Darlipalil Village before Confluence to Lilari Nallah (d/s of Lakhanpur OCP)	Lilari Nallah Near Kudaloi Village (u/s of Lakhanpur OCP)	Lilari Nallah Near Lilari Bridge Village (d/s of Lakhanpur OCP)	
NAME OF STATIONS					
Date of Sampling	14-Nov-25	14-Nov-25	14-Nov-25	14-Nov-25	
pH	6.64	6.84	7.24	6.66	6.5-8.5
Color (Hazen unit)	3	4	2	3	300
Dissolved Oxygen(mg/L)	6.9	6.7	7.0	6.8	4
BOD (3 days 27°C(mg/L)	2.3	2.5	2.4	2.6	3
Chlorides(mg/L)	9.71	11.65	5.82	13.59	600
Sulphate(mg/L)	110.13	115.40	25.27	35.81	400
Nitrate(mg/L)	5.31	5.72	<0.5	4.47	50
Fluoride(mg/L)	<0.30	0.31	<0.30	<0.30	1.5
Total Hardness(mg/L)	157.68	190.03	88.95	169.81	-
Total dissolved solids (mg/L)	354	399	166	367	1500
TSS(mg/L)	42	50	36	43	-
Copper(mg/L)	<0.03	<0.03	<0.03	<0.03	1.5
Iron(mg/L)	<0.1	0.12	0.16	<0.1	50
Zinc(mg/L)	<0.04	0.06	<0.04	<0.04	15
Lead(mg/L)	<0.005	<0.005	<0.005	<0.005	0.1
Cadmium(mg/L)	<0.001	<0.001	<0.001	<0.001	0.01
Hexavalent Chromium(as Cr <sup>6+</sup> (mg/L)	<0.05	<0.05	<0.05	<0.05	0.05
Arsenic(mg/L)	<0.005	<0.005	<0.005	<0.005	0.2
Selenium(mg/L)	<0.005	<0.005	<0.005	<0.005	0.05
Phenolics(mg/L)	<0.001	<0.001	<0.001	<0.001	0.005
Oil & Grease (mg/L)	<4.0	<4.0	<4.0	<4.0	0.1
Residual Free Chlorine(mg/L)	<0.2	<0.2	<0.2	<0.2	0.2
MPN (Index/100 ml)	110	140	120	150	-

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*Jaisankar*



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## Surface Water Quality Data Lakhanpur Area

Project/OCP	LBL OCP			IS:2296-1982 Tolerance for inland Surface water (Class C)
	Confluence point of Lilara Nallah with IB River	Jurabaga Pond	Adhapada Village	
NAME OF STATIONS	14-Nov-25	14-Nov-25	14-Nov-25	
Date of sampling	14-Nov-25	14-Nov-25	14-Nov-25	
pH	7.26	6.50	6.77	6.5-8.5
Color (Hazen unit)	3	3	4	300
Dissolved Oxygen(mg/L)	6.5	6.6	7.1	4
BOD (3 days 27°c(mg/L)	2.3	2.2	2.3	3
Chlorides(mg/L)	3.88	9.71	9.71	600
Sulphate(mg/L)	23.37	8.91	5.67	400
Nitrate(mg/L)	<0.5	<0.5	<0.5	50
Fluoride(mg/L)	<0.30	<0.30	<0.30	1.5
Total Hardness(mg/L)	72.77	36.38	44.47	-
Total dissolved solids (mg/L)	176	129	118	1500
TSS(mg/L)	35	30	26	-
Copper(mg/L)	<0.03	<0.03	<0.03	1.5
Iron(mg/L)	<0.1	<0.1	0.18	50
Zinc(mg/L)	<0.04	<0.04	<0.04	15
Lead(mg/L)	<0.005	<0.005	<0.005	0.1
Cadmium(mg/L)	<0.001	<0.001	<0.001	0.01
Hexavalent Chromium(as Cr <sup>6+</sup> )(mg/L)	<0.05	<0.05	<0.05	0.05
Arsenic(mg/L)	<0.005	<0.005	<0.005	0.2
Selenium(mg/L)	<0.005	<0.005	<0.005	0.05
Phenolics(mg/L)	<0.001	<0.001	<0.001	
Oil & Grease (mg/L)	<4.0	<4.0	<4.0	
Residual Free Chlorine(mg/L)	<0.2	<0.2	<0.2	
MPN (Index/100 ml)	110	94		

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## Drinking Water Quality Data Lakhanpur Area

Project / OCP	Integrated LBL OCP			Indian Drinking Standards (IS-10500):2012	
	LKP Project Office	IWSS Inlet-BIT	IWSS Outlet-BIT	Acceptable	Permissible
Monitoring Station	15-Dec-2025	15-Dec-2025	15-Dec-2025		
Date of Sampling	15-Dec-2025	15-Dec-2025	15-Dec-2025		
Colour(Hazen)	1	2	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	1	2	1	5
pH	7.69	7.84	7.78	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	70.72	74.88	66.56	200	600
Chloride(mg/L)	13.66	15.54	11.66	250	1000
Sulphate(mg/L)	27.2	24.4	24	200	400
Nitrate(mg/L)	<0.5	<0.5	<0.5	45	No relaxation
Total Hardness (Ca CO <sub>3</sub> )(mg/L)	88.70	88.70	80.64	200	600
Calcium(mg/L)	21.01	21.01	21.01	75	200
Fluoride(mg/L)	0.65	0.57	0.52	1	1.5
Total Dissolve Solid(mg/L)	144	148	130	500	2000
Copper(mg/L)	<0.03	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	<0.04	<0.04	0.1	0.3
Iron(mg/L)	<0.1	<0.1	<0.1	1	No relaxation
Zinc(mg/L)	<0.04	<0.04	<0.04	5	15
Lead(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Cadmium(mg/L)	<0.001	<0.001	<0.001	0.003	No relaxation
Total Chromium (mg/L)	<0.01	<0.01	<0.01	0.05	No relaxation
Arsenic(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Boron(mg/L)	<0.2	<0.2	<0.2	0.5	2.4

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## Drinking Water Quality Data Lakhanpur Area

Project / OCP	Integrated LBL OCP			Indian Drinking Standards (IS-10500):2012	
	LKP Project Office	IWSS Inlet-BIT	IWSS Outlet-BIT	Acceptable	Permissible
Monitoring Station	15-Dec-2025	15-Dec-2025	15-Dec-2025	0.01	No relaxation
Date of Sampling	15-Dec-2025	15-Dec-2025	15-Dec-2025	0.001	0.002
Selenium(mg/L)	<0.005	<0.005	<0.005	0.2	1
Sodium(mg/L)	5.48	6.48	5.28	-	-
Potassium(mg/L)	2.44	2.24	1.02	-	-
Phenolics(mg/L)	<0.001	<0.001	<0.001	-	-
Residual Free Chlorine(mg/L)	<0.2	<0.2	<0.2	-	-
MPN (Index/100 ml)	Not Detected	Not Detected	Not Detected	-	-

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Integrated LBL OCP



**Environmental Monitoring Report  
For  
December -2025**

**Project: Basundhara(W) OCP  
Area: Mahalaxmi Area  
Coalfield: Ib Valley**



**Mahanadi Coalfields Limited**



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**cmpdi**  
Mini Batna

**Central Mine Planning & Design Institute Ltd.**  
(A Subsidiary of Coal India Ltd.)

**Regional Institute-VII, Samantpuri, P.O : RRL, Bhubaneswar-751013 (Odisha)**  
[Assistance from Environment Division, CMPDI(HQs), Ranchi ]

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Test Report



AMBIENT AIR QUALITY DATA

Area :

Mahalaxmi

(Compliance Station)

Project :

Basundhara (w) OCP

(conc. in  $\mu\text{g}/\text{cu.m.}$ )

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	CO (mg/m <sup>3</sup> )	Dust Generating Source	Distance from DGS
06-Dec-25	North of the Sardega Railway Siding, Kulapada	205	102	60	16.24	38.32	1.4	Mining Activities, OCP, Coal Transportation	About 500m
06-Dec-25	Body Workshop Basundhara	212	107	57	14.11	21.89	0.9	Mining Activities	About 100m
27-Dec-25	North of the Sardega Railway Siding, Kulapada	218	118	63	13.44	21.29	1.7	Mining Activities, OCP, Coal Transportation	About 500m
27-Dec-25	Body Workshop Basundhara	265	167	71	15.73	39.44	1.2	Mining Activities	About 100m

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 MoEF, Sandhara, Notification dated 25th September, 2000

500	250		120	120	928 Hours
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AMBIENT AIR QUALITY DATA

Area : Mahalaxmi

(Reference Station)

Project :

Basundhara (w) OCP

(conc. in  $\mu\text{g}/\text{cu.m.}$ )

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
01-Dec-25	Sarangijharia Village	219	84	45	9.21	20.69	Domestic	About 500m
01-Dec-25	Khamarpara Village	238	93	51	12.75	22.86	Mining Activities, Coal Transportation	About 500m
01-Dec-25	Ratansara Village	196	71	43	14.91	14.66	Transportation	About 100m
01-Dec-25	West of Coal Stock, Near Golf Course	249	94	53	21.49	39.66	Mining Activities, OCP, Transportation	About 500m
02-Dec-25	Khamarpara Village	220	79	44	20.60	32.74	Mining Activities, Coal Transportation	About 500m
02-Dec-25	West of Coal Stock, Near Golf Course	225	85	48	12.47	26.32	Mining Activities, OCP, Transportation	About 500m
02-Dec-25	Ratansara Village	189	77	44	11.30	39.49	Transportation	About 100m
02-Dec-25	Sarangijharia Village	226	87	48	12.59	34.80	Domestic	About 500m
08-Dec-25	Khamarpara Village	199	75	40	12.32	38.57	Mining Activities, Coal Transportation	About 500m
08-Dec-25	West of Coal Stock, Near Golf Course	217	82	46	15.28	20.03	Mining Activities, OCP, Transportation	About 500m
08-Dec-25	Sarangijharia Village	186	83	42	25.10	27.52	Domestic	About 500m
08-Dec-25	Ratansara Village	243	84	44	11.84	24.89	Transportation	About 100m
09-Dec-25	West of Coal Stock, Near Golf Course	234	88	49	16.98	22.26	Mining Activities, OCP, Transportation	About 500m
09-Dec-25	Sarangijharia Village	175	77	40	13.59	29.40	Domestic	About 500m
09-Dec-25	Ratansara Village	186	75	42	20.23	21.92	Transportation	About 100m
09-Dec-25	Khamarpara Village	207	82	43	19.38	20.32	Mining Activities, Coal Transportation	About 500m
16-Dec-25	Ratansara Village	195	67	38	10.79	23.66	Transportation	About 100m
16-Dec-25	Sarangijharia Village	207	81	45	12.00	24.44	Domestic	About 500m
16-Dec-25	Khamarpara Village	238	94	55	11.45	30.55	Mining Activities, Coal Transportation	About 500m
16-Dec-25	West of Coal Stock, Near Golf Course	223	89	52	17.99	28.14	Mining Activities, OCP, Transportation	About 500m
17-Dec-25	Ratansara Village	184	66	37	11.42	22.45	Transportation	About 100m
17-Dec-25	Sarangijharia Village	224	85	49	16.15	34.47	Domestic	About 500m

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Project :

## Basundhara (w) OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
17-Dec-25	Khamarpara Village	208	86	48	13.89	29.89	Mining Activities, Coal Transportation	About 500m
17-Dec-25	West of Coal Stock, Near Golf Course	238	95	57	19.93	31.16	Mining Activities, OCP, Transportation	About 500m
22-Dec-25	Khamarpara Village	197	78	45	12.37	41.22	Mining Activities, Coal Transportation	About 500m
22-Dec-25	Sarangijharia Village	213	82	48	12.96	23.78	Domestic	About 500m
22-Dec-25	West of Coal Stock, Near Golf Course	205	85	48	19.04	29.77	Mining Activities, OCP, Transportation	About 500m
22-Dec-25	Ratansara Village	176	71	36	13.35	25.41	Transportation	About 100m
23-Dec-25	Khamarpara Village	183	71	40	11.32	35.55	Mining Activities, Coal Transportation	About 500m
23-Dec-25	Ratansara Village	246	80	43	20.66	36.72	Transportation	About 100m
23-Dec-25	Sarangijharia Village	238	90	53	15.59	23.84	Domestic	About 500m
23-Dec-25	West of Coal Stock, Near Golf Course	227	90	51	18.08	28.28	Mining Activities, OCP, Transportation	About 500m
29-Dec-25	Ratansara Village	248	81	45	10.29	27.39	Transportation	About 100m
29-Dec-25	Sarangijharia Village	244	92	56	21.12	29.94	Domestic	About 500m
29-Dec-25	West of Coal Stock, Near Golf Course	239	93	53	17.24	26.96	Mining Activities, OCP, Transportation	About 500m
29-Dec-25	Khamarpara Village	212	87	49	12.10	24.20	Mining Activities, Coal Transportation	About 500m
30-Dec-25	West of Coal Stock, Near Golf Course	246	96	55	17.16	26.84	Mining Activities, OCP, Transportation	About 500m
30-Dec-25	Khamarpara Village	209	83	47	12.47	18.82	Mining Activities, Coal Transportation	About 500m
30-Dec-25	Ratansara Village	183	77	43	13.32	40.64	Transportation	About 100m
30-Dec-25	Sarangijharia Village	225	87	51	15.66	31.70	Domestic	About 500m

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\*NAAQS, 2009

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## Test Report


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**AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)**

Area :

Mahalaxmi

Project :

Basundhara (w) OCP

Date of Sampling	Monitoring Station	Ammonia (NH <sub>3</sub> )	Ozone (O <sub>3</sub> )	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo(a)Pyrene	Benzene
		(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(µg/m <sup>3</sup> )
01-Dec-25	Sarangijharia Village	<20.0	13.57	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
01-Dec-25	West of Coal Stock, Near Golf Course	<20.0	10.17	<0.1	<1.0	<1.0	1.7	BQL(QL=0.7)	BQL
01-Dec-25	Khamarpara Village	<20.0	26.40	<0.1	<1.0	<1.0	1.5	BQL(QL=0.7)	BQL
01-Dec-25	Ratansara Village	<20.0	18.65	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
02-Dec-25	West of Coal Stock, Near Golf Course	<20.0	23.98	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
02-Dec-25	Sarangijharia Village	<20.0	23.73	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
02-Dec-25	Khamarpara Village	<20.0	27.37	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
02-Dec-25	Ratansara Village	<20.0	12.12	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
08-Dec-25	West of Coal Stock, Near Golf Course	<20.0	27.37	<0.1	<1.0	<1.0	1.7	BQL(QL=0.7)	BQL
08-Dec-25	Sarangijharia Village	<20.0	26.15	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
08-Dec-25	Ratansara Village	<20.0	23.00	<0.1	<1.0	<1.0	1.7	BQL(QL=0.7)	BQL
08-Dec-25	Khamarpara Village	<20.0	23.48	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
09-Dec-25	Ratansara Village	<20.0	23.48	<0.1	<1.0	<1.0	1.5	BQL(QL=0.7)	BQL
09-Dec-25	Sarangijharia Village	<20.0	19.87	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
09-Dec-25	West of Coal Stock, Near Golf Course	<20.0	23.98	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
09-Dec-25	Khamarpara Village	<20.0	15.02	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
16-Dec-25	Khamarpara Village	<20.0	19.37	<0.1	<1.0	<1.0	1.6	BQL(QL=0.7)	BQL
16-Dec-25	Sarangijharia Village	<20.0	14.53	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
16-Dec-25	Ratansara Village	<20.0	21.55	<0.1	<1.0	<1.0	1.7	BQL(QL=0.7)	BQL
16-Dec-25	West of Coal Stock, Near Golf Course	<20.0	23.25	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
17-Dec-25	Ratansara Village	<20.0	11.13	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
17-Dec-25	West of Coal Stock, Near Golf Course	<20.0	15.50	<0.1	<1.0	<1.0	1.7	BQL(QL=0.7)	BQL
17-Dec-25	Sarangijharia Village	<20.0	27.85	<0.1	<1.0	<1.0	1.5	BQL(QL=0.7)	BQL

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400(24 hours)	180(hours)	1.0(24 hours)	6.0(Annual)	20(Annual)	02(8hours)	01(annual)	05(annual)
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J. K. Kulkarni

Project :

Basundhara (w) OCP

Date of Sampling	Monitoring Station	Ammonia(NH3)	Ozone(O3)	Lead(Pb)	Arsenic(As)	Nickel(Ni)	CO	Benzo(a)Pyrene	Benzene
		(µg/m3)	(µg/m3)	(µg/m3)	(ng/m3)	(ng/m3)	(mg/m3)	(ng/m3)	(µg/m3)
17-Dec-25	Khamarpara Village	<20.0	17.68	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
22-Dec-25	Sarangjharria Village	<20.0	13.32	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
22-Dec-25	West of Coal Stock, Near Golf Course	<20.0	15.02	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
22-Dec-25	Ratansara Village	<20.0	15.50	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
22-Dec-25	Khamarpara Village	<20.0	10.65	<0.1	<1.0	<1.0	1.6	BQL(QL=0.7)	BQL
23-Dec-25	West of Coal Stock, Near Golf Course	<20.0	23.00	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
23-Dec-25	Sarangjharria Village	<20.0	26.15	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
23-Dec-25	Ratansara Village	<20.0	15.50	<0.1	<1.0	<1.0	1.7	BQL(QL=0.7)	BQL
23-Dec-25	Khamarpara Village	<20.0	22.52	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
29-Dec-25	Ratansara Village	<20.0	12.35	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
29-Dec-25	Sarangjharria Village	<20.0	23.25	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
29-Dec-25	Khamarpara Village	<20.0	16.72	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
29-Dec-25	West of Coal Stock, Near Golf Course	<20.0	13.80	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
30-Dec-25	Sarangjharria Village	<20.0	17.68	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
30-Dec-25	West of Coal Stock, Near Golf Course	<20.0	23.00	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
30-Dec-25	Ratansara Village	<20.0	20.58	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
30-Dec-25	Khamarpara Village	<20.0	17.20	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL

  
 Authorised Signatory  
 C. P. P. I. No. VII, LAB  
 Bhubaneswar  
 Bhubaneswar

400(24hrs)	180(hrs)	1.0(24hrs)	6.0(Annual)	20(Annual)	02(8hours)	01(annual)	05(annual)
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*J. Kottanai*



**TABLE--**  
**NOISE LEVEL MONITORING DATA**

AREA : **Mahalaxmi**

PROJECT : **Basundhara (W) OCP**

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
13-Dec-25	North of the Sardega Railway Siding ,Kulapada	64.2	56.8
13-Dec-25	Ratansara Village	52.8	42.6
13-Dec-25	South-West of Working Face -Gopalpur Village,Near CMPDIL Camp	59.9	53.6
13-Dec-25	West of Coal Stock , Near Golf Course	50.6	40.3
13-Dec-25	Sarangijharia Community Centre	49.1	40.8
29-Dec-25	Ratansara Village	49.8	42.6
29-Dec-25	West of Coal Stock , Near Golf Course	49.3	40.8
29-Dec-25	Sarangijharia Community Centre	50.1	40.4
29-Dec-25	North of the Sardega Railway Siding ,Kulapada	60.7	54.3
29-Dec-25	South-West of Working Face -Gopalpur Village,Near CMPDIL Camp	52.9	42.6

**Authorised Signatory**  
**CMPDI, K. P. LAB**  
**BHUBANESWAR**

MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 75dB(A) (Industrial)	10.00 PM -6.00 AM Leq 70dB(A) (Industrial)
MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 55dB(A) (Residential)	10.00 PM -6.00 AM Leq 45dB(A) (Residential)
MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 65dB(A) (Commercial)	10.00 PM -6.00 AM Leq 55dB(A) (Commercial)
MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 50dB(A) (Silence Zone)	10.00 PM -6.00 AM Leq 40dB(A) (Silence Zone)

*Janaki*



सीएनपीडीआई  
THE  
cmpdi  
INDIA

TABLE--

**EFFLUENT QUALITY DATA**

Area :

Mahalaxmi

(All dimensions are in mg/l unless otherwise stated except pH)

Project :

Basundhara (W) OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	TDS	DO	Remarks
13-Dec-25	Basundhara (W) OCP Mine Sump	6.93	<4.0	21	16	-	-	-	
13-Dec-25	Sardega Railway Siding Sedimentation Pond	6.56	5.4	72	96	-	-	-	
13-Dec-25	Outlet of Excavation Workshop, B(W) OCP	-	-	-	-	-	-	-	Dry
13-Dec-25	Inlet of Excavation Workshop, B(W) OCP	-	-	-	-	-	-	-	Dry
30-Dec-25	Inlet to ETP at Excavation Workshop, B(W)OCP	-	-	-	-	-	-	-	Dry
30-Dec-25	Outlet of ETP at Excavation Workshop, B(W)OCP	-	-	-	-	-	-	-	Dry

Signature  
Authorized Signatory  
LAB

Signature

As per Standard Notification dated 25th September, 2000 and MoEF Schedule VI, General standard for discharge of Environmental Pollutants Part A: Effluents

5.5-9.0	10	100	250	30
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मिनी रोलिंग  
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Mini Rolling

## Effluent Quality (All Parameter): - Mahalaxmi Area

Project (OCP / UG)	Basundhara OCP		MoEF-Sch-VI Standards
	Basundhara (W) OCP Mine Sump	Sardega Railway Siding Sedimentation Pond	
NAME OF THE STATION			
Date of Sampling	11-Nov-2025	11-Nov-2025	
Odour	Unobjectionable	Unobjectionable	-
Colour(Hazen)	4	2	-
Temperature(°C)	23.7	23.5	Shall not exceed 5 °C above the receiving temperature
pH	7.56	7.66	5.5-9.0
Total Hardness (asCaCO <sub>3</sub> ),mg/L	137.46	137.46	-
Total Dissolved Solids, mg/L	265	254	-
Nitrate Nitrogen(mg/L)(As N)	1.35	0.45	10
Ammonical Nitrogen , mg/l (As N)	<0.20	<0.20	50
Total Kjeldhal Nitrogen, mg/l (As N)	1.74	3.49	100
Sulphide (mg/L)	<0.10	<0.10	2
BOD [3 days at 27°C] (mg/L)	3.5	3.2	30
Fluoride(mg/L)	0.56	0.81	2
Copper(mg/L)	<0.03	<0.03	3
Manganese(mg/L)	0.29	0.36	2
Iron(mg/L)	<0.1	<0.1	3
Zinc(mg/L)	0.05	0.06	5
Lead, mg/l	<0.005	<0.005	0.1
Cadmium, mg/l	<0.001	<0.001	2
Total Chromium(mg/L)	<0.01	<0.01	2
Hexavalent Chromium(mg/L)	<0.05	<0.05	0.1
Nickel(mg/L)	1.38	0.16	3
Arsenic, mg/l	<0.005	<0.005	0.2
Selenium (mg/L)	<0.005	<0.005	0.05
Dissolved Phosphate(mg/L)	<4.0	<4.0	5
Phenolics (mg/L)	<0.001	<0.001	1

*Katharash*  
Authorised Signatory  
CMPDI, RI-VII, LAB  
BHUBANESWAR

*Jasmati*



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लिमिटेड  
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## Drinking Water Quality Data Mahalaxmi Area

Project / OCP	Basundhara (W) Water Treatment Plant Clear Water Reservoir	Indian Drinking Standards (IS-10500):2012	
		Acceptable	Permissible
Monitoring Station	13-Dec-2025		
Date of Sampling	3	5	15
Colour(Hazen)	Agreeable	Agreeable	Agreeable
Odour	Agreeable	Agreeable	Agreeable
Taste	3	1	5
Turbidity(NTU)	7.33	6.5-8.5	No relaxation
pH	33.28	200	600
Total Alkalinity(mg/L)	13.60	250	1000
Chloride(mg/L)	102.4	200	400
Sulphate(mg/L)	2.91	45	No relaxation
Nitrate(mg/L)	161.28	200	600
Total Hardness (Ca CO <sub>3</sub> )(mg/L)	37.17	75	200
Calcium(mg/L)	0.68	1	1.5
Fluoride(mg/L)	230	500	2000
Total Dissolve Solid(mg/L)	<0.03	0.05	1.5
Copper(mg/L)	<0.04	0.1	0.3
Manganese(mg/L)	<0.1	1	No relaxation
Iron(mg/L)	0.14	5	15
Zinc(mg/L)	<0.005	0.01	No relaxation
Lead(mg/L)	<0.001	0.003	No relaxation
Cadmium(mg/L)	<0.01	0.05	No relaxation
Total Chromium (mg/L)	<0.005	0.01	No relaxation
Arsenic(mg/L)	<0.2	0.5	2.4
Boron(mg/L)			

*Authorised Signatory*  
Authorised Signatory  
CMPDI, RI-VII, LAB  
BHUBANESWAR

*Jannab*



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## Drinking Water Quality Data Mahalaxmi Area

Project / OCP Monitoring Station	Basundhara (W) Water Treatment Plant Clear Water Reservoir	Indian Drinking Standards (IS-10500):2012	
		Acceptable	Permissible
Date of Sampling	13-Dec-2025	0.01	No relaxation
Selenium(mg/L)	<0.005		
Sodium(mg/L)	6.77		
Potassium(mg/L)	1.82		
Phenolics(mg/L)	<0.001	0.001	0.002
Residual Free Chlorine(mg/L)	<0.2	0.2	1
MPN (Index/100 ml)	Not Detected	-	-

*J. Pattnaik*  
Authorised Signatory  
CMPDI, RI-VII, LAB  
BHUBANESWAR

*J. Pattnaik*

**Environmental Monitoring Report  
For  
December -2025**

**Project: Basundhara(E) OCP  
Area: Mahalaxmi Area  
Coalfield: Ib Valley**



**MCL**

**Mahanadi Coalfields Limited**



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मिनी रात्रा  
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Mini Ratna

**Central Mine Planning & Design Institute Ltd.**  
(A Subsidiary of Coal India Ltd.)

**Regional Institute-VII, Samantpuri, P.O : RRL, Bhubaneswar-751013 (Odisha)**  
[Assistance from Environment Division, CMPDI(HQs), Ranchi ]

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## Test Report



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 Cmpdi  
 NEW DELHI

## AMBIENT AIR QUALITY DATA

Area :

Mahalaxmi

(Reference Station)

Project :

Basundhara (E) OCP

(conc. in  $\mu\text{g}/\text{cu.m.}$ )

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
01-Dec-25	Khamarpara Village (Reported Only)	238	93	51	12.75	22.86	Mining Activities, Coal Transportation	About 500m
02-Dec-25	Khamarpara Village (Reported Only)	220	79	44	20.60	32.74	Mining Activities, Coal Transportation	About 500m
08-Dec-25	Khamarpara Village (Reported Only)	199	75	40	12.32	38.57	Mining Activities, Coal Transportation	About 500m
09-Dec-25	Khamarpara Village (Reported Only)	207	82	43	19.38	20.32	Mining Activities, Coal Transportation	About 500m
16-Dec-25	Khamarpara Village (Reported Only)	238	94	55	11.45	30.55	Mining Activities, Coal Transportation	About 500m
17-Dec-25	Khamarpara Village (Reported Only)	208	86	48	13.89	29.89	Mining Activities, Coal Transportation	About 500m
22-Dec-25	Khamarpara Village (Reported Only)	197	78	45	12.37	41.22	Mining Activities, Coal Transportation	About 500m
23-Dec-25	Khamarpara Village (Reported Only)	183	71	40	11.32	35.55	Mining Activities, Coal Transportation	About 500m
29-Dec-25	Khamarpara Village (Reported Only)	212	87	49	12.10	24.20	Mining Activities, Coal Transportation	About 500m
30-Dec-25	Khamarpara Village (Reported Only)	209	83	47	12.47	18.82	Mining Activities, Coal Transportation	About 500m

*Hattanaik*  
 Authorised Signatory  
 CMPDI, RI-VII, LAB  
 BHUBANESWAR

\*NAAQS, 2009

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## Test Report



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**AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)**

Area :

Mahalaxmi

Project :

Basundhara (E) OCP

Date of Sampling	Monitoring Station	Ammonia (NH <sub>3</sub> )	Ozone (O <sub>3</sub> )	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo(a)Pyrene	Benzene
		(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(mg/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(µg/m <sup>3</sup> )
01-Dec-25	Khamarpara Village (Reported Only)	<20.0	26.40	<0.1	<1.0	<1.0	1.5	BQL(QL=0.7)	BQL
02-Dec-25	Khamarpara Village (Reported Only)	<20.0	27.37	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
08-Dec-25	Khamarpara Village (Reported Only)	<20.0	23.48	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
09-Dec-25	Khamarpara Village (Reported Only)	<20.0	15.02	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
16-Dec-25	Khamarpara Village (Reported Only)	<20.0	19.37	<0.1	<1.0	<1.0	1.6	BQL(QL=0.7)	BQL
17-Dec-25	Khamarpara Village (Reported Only)	<20.0	17.68	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
22-Dec-25	Khamarpara Village (Reported Only)	<20.0	10.65	<0.1	<1.0	<1.0	1.6	BQL(QL=0.7)	BQL
23-Dec-25	Khamarpara Village (Reported Only)	<20.0	22.52	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
29-Dec-25	Khamarpara Village (Reported Only)	<20.0	16.72	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
30-Dec-25	Khamarpara Village (Reported Only)	<20.0	17.20	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL

*Hattarick*  
 Authorised Signatory  
 CMPDI, RI-VII, LAB  
 BHUBANESWAR

Standard	400(24hrs)	180(hour)	1.0(24hrs)	6.0(Annual)	20(Annual)	02(8hours)	01(annual)	05(annual)
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*Jasmati*



TABLE--  
**NOISE LEVEL MONITORING DATA**

AREA :

Mahalaxmi

PROJECT :

Basundhara (E) OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
13-Dec-25	Quary Sump of Basundhara East OCP/ Near CHP of Basundhara East OCP	52.6	40.2
29-Dec-25	Quary Sump of Basundhara East OCP/ Near CHP of Basundhara East OCP	60.7	58.4

*Dothawoik*  
Authorised Signatory  
CMPDI, RI-VII, LAB  
BHUBANESWAR

MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 75dB(A) (Industrial)	10.00 PM -6.00 AM Leq 70dB(A) (Industrial)
MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 55dB(A) (Residential)	10.00 PM -6.00 AM Leq 45dB(A) (Residential)
MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 65dB(A) (Commercial)	10.00 PM -6.00 AM Leq 55dB(A) (Commercial)
MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 50dB(A) (Silence Zone)	10.00 PM -6.00 AM Leq 40dB(A) (Silence Zone)

*Janaki*



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Mini Ratna

## Surface Water Quality Data Mahalaxmi Area

Project/OCP	Basundhara (E)	IS:2296-1982 Tolerance for inland Surface water (Class C)
NAME OF STATIONS	Chaturdhara River d/s	
Date of sampling	11-Nov-25	
pH	7.08	6.5-8.5
Color (Hazen unit)	3	300
Dissolved Oxygen(mg/L)	7.2	4
BOD (3 days 27°C)(mg/L)	2.2	3
Chlorides(mg/L)	<4.0	600
Sulphate(mg/L)	6.89	400
Nitrate(mg/L)	<0.5	50
Fluoride(mg/L)	<0.30	1.5
Total Hardness(mg/L)	28.30	-
Total dissolved solids (mg/L)	99	1500
TSS(mg/L)	24	-
Copper(mg/L)	<0.03	1.5
Iron(mg/L)	0.28	50
Zinc(mg/L)	<0.04	15
Lead(mg/L)	<0.005	0.1
Cadmium(mg/L)	<0.001	0.01
Hexavalent Chromium(as Cr <sup>6+</sup> )(mg/L)	<0.05	0.05
Arsenic(mg/L)	<0.005	0.2
Selenium(mg/L)	<0.005	0.05
Phenolics(mg/L)	<0.001	0.005
Oil & Grease (mg/L)	<4.0	0.1
Residual Free Chlorine(mg/L)	<0.2	0.2
MPN (Index/100 ml)	120	-

*H. Jaiswal*  
Authorised Signatory  
CMPDI, RI-VII, LAB  
BHUBANESWAR

*Jaiswal*



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मिनी रॉस  
cmpdi  
Mini Ratna

## Drinking Water Quality Data Mahalaxmi Area

Project / OCP	Basundhara (E)	Indian Drinking Standards (IS-10500):2012	
	Basundhar East Sump Quarry OCP		
Monitoring Station			
Date of Sampling	13-Dec-2025	Acceptable	Permissible
Colour(Hazen)	3	5	15
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	1	5
pH	7.42	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	37.44	200	600
Chloride(mg/L)	15.54	250	1000
Sulphate(mg/L)	116.4	200	400
Nitrate(mg/L)	2.86	45	No relaxation
Total Hardness (Ca CO <sub>3</sub> )(mg/L)	185.47	200	600
Calcium(mg/L)	38.78	75	200
Fluoride(mg/L)	0.64	1	1.5
Total Dissolve Solid(mg/L)	258	500	2000
Copper(mg/L)	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	0.1	0.3
Iron(mg/L)	<0.1	1	No relaxation
Zinc(mg/L)	<0.04	5	15
Lead(mg/L)	<0.005	0.01	No relaxation
Cadmium(mg/L)	<0.001	0.003	No relaxation
Total Chromium (mg/L)	<0.01	0.05	No relaxation
Arsenic(mg/L)	<0.005	0.01	No relaxation
Boron(mg/L)	<0.2	0.5	2.4

*Kottarak*  
Authorised Signatory  
CMPDI, RI-VII, LAB  
BHUBANESWAR

*Jamali*



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Mini Lab

## Drinking Water Quality Data Mahalaxmi Area

Project / OCP	Basundhara (E)	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	Basundhar East Sump Quarry OCP	Acceptable	Permissible
Date of Sampling	13-Dec-2025		
Selenium(mg/L)	<0.005	0.01	No relaxation
Sodium(mg/L)	6.24		
Potassium(mg/L)	2.14		
Phenolics(mg/L)	<0.001	0.001	0.002
Residual Free Chlorine(mg/L)	<0.2	0.2	1
MPN (Index/100 ml)	Not Detected	-	-

*Kattanaik*  
Authorised Signatory  
CMPDI, RI-VII, LAB  
BHUGANESWAR

*Jaswant*

Legend  
● Air Monitoring Locations

Sarangliharā Village

Basundhara (W) OCP

North of the Sardega Railway Siding, Kuntapada

10.2

Khamarpara, East Side of Sardega Railway Siding

West of Coal Stock, Near Golf Course

Ratansara Village

Google Earth



**Environmental Monitoring Report  
For  
December -2025**

**Project: Orient Mine no. 1&2  
Area: Orient  
Coalfield: Ib Valley**



**Mahanadi Coalfields Limited**



**Central Mine Planning & Design Institute Ltd.**  
(A Subsidiary of Coal India Ltd.)

**Regional Institute-VII, Samantpuri, P.O : RRL, Bhubaneswar-751013 (Odisha)**  
[Assistance from Environment Division, CMPDI(HQs), Ranchi ]

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 AIR QUALITY

Test Report

AMBIENT AIR QUALITY DATA

Area :

Orient

(Compliance Station)

Project :

Orient Mine No. 1 & 2

(conc. in  $\mu\text{g}/\text{cu.m.}$ )

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	CO (mg/m <sup>3</sup> )	Dust Generating Source	Distance from DGS
12-Dec-25	Orient Mine No. 1 & 2	286	184	78	10.34	27.95	-	Coal Stock Yard, Surface Bunker, Coal	About 250m
20-Dec-25	Orient Mine No. 1 & 2	295	170	78	13.92	36.49	-	Coal Stock Yard, Surface Bunker, Coal	About 250m

*Handwritten Signature*  
 Authorised Signatory  
 CMPDI CIVIL LAB  
 BHUBANESWAR

Mo. 22, 2025  
 Notification dated 25th  
 September, 2000

500	250		120	120	02/8 Hours
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*Handwritten Signature*



राष्ट्रीय पर्यावरण  
अनुसंधान संस्थान  
cpcbc  
भारत सरकार

Test Report

**AMBIENT AIR QUALITY DATA**

Area :

**Orient**

(Reference Station)

Project :

**Orient Mine No.1 & 2**

(conc. in  $\mu\text{g}/\text{cu.m.}$ )

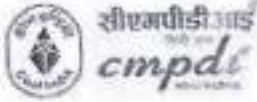
Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
03-Dec-25	Orient GM Office	212	83	44	13.08	36.96	Domestic and other Anthropogenic Activities	About 1000m
04-Dec-25	Orient GM Office	223	87	49	8.88	29.60	Domestic and other Anthropogenic Activities	About 1000m
10-Dec-25	Orient GM Office	237	94	52	11.28	18.35	Domestic and other Anthropogenic Activities	About 1000m
11-Dec-25	Orient GM Office	224	96	54	7.46	17.60	Domestic and other Anthropogenic Activities	About 1000m
18-Dec-25	Orient GM Office	215	88	47	18.85	26.71	Domestic and other Anthropogenic Activities	About 1000m
19-Dec-25	Orient GM Office	196	88	49	13.95	27.42	Domestic and other Anthropogenic Activities	About 1000m
24-Dec-25	Orient GM Office	210	91	50	12.29	22.37	Domestic and other Anthropogenic Activities	About 1000m
25-Dec-25	Orient GM Office	228	93	55	15.47	41.39	Domestic and other Anthropogenic Activities	About 1000m

*Forwards*  
Authorised Signatory  
CPCB, 108, 2009-211, LAB  
BHUBANESWAR

	100	60	80	80
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*Jamali*

Test Report



AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area :

Orient

Project :

Orient Mine No.1 & 2

Date of Sampling	Monitoring Station	Ammonia (NH <sub>3</sub> )	Ozone (O <sub>3</sub> )	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo(a)Pyrene	Benzene
		(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(mg/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(µg/m <sup>3</sup> )
03-Dec-25	Orient GM Office	<20.0	21.07	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
04-Dec-25	Orient GM Office	<20.0	21.32	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
10-Dec-25	Orient GM Office	<20.0	18.65	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
11-Dec-25	Orient GM Office	<20.0	10.65	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
18-Dec-25	Orient GM Office	<20.0	15.25	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
19-Dec-25	Orient GM Office	<20.0	16.47	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
24-Dec-25	Orient GM Office	<20.0	19.13	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
25-Dec-25	Orient GM Office	<20.0	19.13	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL

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 Authorized Signatory  
 CMPDI, RI-VII, LAB  
 BHUBANESWAR

400(24 hours)	180(hours)	1.0(24 hours)	6.0(Annual)	20(Annual)	02(8 hours)	01(annual)	05(annual)
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सिंहमपीडीआई  
CMPDI  
भुवनेश्वर

TABLE--

**NOISE LEVEL MONITORING DATA**

AREA :

*Orient*

PROJECT :

*Orient Mine No. 1 & 2*

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
11-Dec-25	VIP Guest House, IB Valley (Reported Only)	50.4	42.6
11-Dec-25	Orient Mine No. 1 & 2	50.6	41.3
26-Dec-25	Orient Mine No. 1 & 2	50.9	39.6
26-Dec-25	VIP Guest House, IB Valley (Reported Only)	49.1	40.5

*Jettanailu*  
Authorised Signatory  
CMPDI, M. VII LAB  
BHUBANESWAR

MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 75dB(A) (Industrial)	10.00 PM -6.00 AM Leq 70dB(A) (Industrial)
MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 55dB(A) (Residential)	10.00 PM -6.00 AM Leq 45dB(A) (Residential)
MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 65dB(A) (Commercial)	10.00 PM -6.00 AM Leq 55dB(A) (Commercial)
MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 50dB(A) (Silence Zone)	10.00 PM -6.00 AM Leq 40dB(A) (Silence Zone)

*Jettanailu*



राजस्थान  
 CMPDI  
 राजस्थान

TABLE--

**EFFLUENT QUALITY DATA**

Area :

Orient

(All dimensions are in mg/l unless otherwise stated except pH)

Project :

Orient Mine No. 1 & 2

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	TDS	DO	Remarks
15-Dec-25	Mine Sump of Mine No. 2	7.11	<4.0	29	24	-	-	-	

*Hattarai*  
 Authorised Signatory  
 CMPDI, RI-VII, LAB  
 BHILWAR

Standard Notification dated 25th September, 2000  
 and MoEF Schedule VI, General standard for discharge  
 of Environmental Pollutants Part A: Effluents

5.5-9.0	10	100	250	30
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*Jamali*



सीएमपीडीआई  
मिनी नगर  
cmpdi  
Mini Nagra

## Drinking Water Quality Data Orient Area

Project / OCP	Orient Mine No. 1 & 2		Indian Drinking Standards (IS-10500):2012	
	Budhijaam Colony	Mine no 1 & 2 Filter Plant	Acceptable	Permissible
Monitoring Station	15-Dec-2025	15-Dec-2025		
Date of Sampling	15-Dec-2025	15-Dec-2025	Acceptable	Permissible
Colour(Hazen)	1	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	1	1	5
pH	7.88	7.76	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	99.80	120.64	200	600
Chloride(mg/L)	23.32	29.14	250	1000
Sulphate(mg/L)	20.4	13.65	200	400
Nitrate(mg/L)	<0.5	<0.5	45	No relaxation
Total Hardness (Ca CO <sub>3</sub> )(mg/L)	112.90	120.96	200	600
Calcium(mg/L)	24.24	25.86	75	200
Fluoride(mg/L)	0.50	0.43	1	1.5
Total Dissolve Solid(mg/L)	174	192	500	2000
Copper(mg/L)	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	<0.04	0.1	0.3
Iron(mg/L)	<0.1	<0.1	1	No relaxation
Zinc(mg/L)	<0.04	0.21	5	15
Lead(mg/L)	<0.005	<0.005	0.01	No relaxation
Cadmium(mg/L)	<0.001	<0.001	0.003	No relaxation
Total Chromium (mg/L)	<0.01	<0.01	0.05	No relaxation
Arsenic(mg/L)	<0.005	<0.005	0.01	No relaxation
Boron(mg/L)	<0.2	<0.2	0.5	2.4

*K. K. Saini*  
Authorised Signatory  
CMPDI, RI-VII, LAB  
BHUBANESWAR

*Januati*



सीएमपीडीआई  
मिनी एल  
cmpdi  
Mini Ratna

## Drinking Water Quality Data Orient Area

Project / OCP	Orient Mine No. 1 & 2		Indian Drinking Standards (IS-10500):2012	
	Budhijaam Colony	Mine no 1 & 2 Filter Plant	Acceptable	Permissible
Monitoring Station				
Date of Sampling	15-Dec-2025	15-Dec-2025	Acceptable	Permissible
Selenium(mg/L)	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	6.48	8.01	-	-
Potassium(mg/L)	1.71	3.25	-	-
Phenolics(mg/L)	<0.001	<0.001	0.001	0.002
Residual Free Chlorine(mg/L)	<0.2	<0.2	0.2	1
MPN (Index/100 ml)	Not Detected	Not Detected	-	-

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Authorised Signatory  
CMPDI, RI-VII, LAB  
BHUBANESWAR

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**Environmental Monitoring Report  
For  
December -2025**

**Project: Orient Mine no. 3  
Area: Orient  
Coalfield: Ib Valley**



**Mahanadi Coalfields Limited**



**Central Mine Planning & Design Institute Ltd.**  
(A Subsidiary of Coal India Ltd.)

**Regional Institute-VII, Samantpuri, P.O : RRL, Bhubaneswar-751013 (Odisha)**  
[Assistance from Environment Division, CMPDI(HQs), Ranchi ]

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सौरभजीपीडी लैब्स  
 CMPDI  
 Bhubaneswar

**Test Report**

**AMBIENT AIR QUALITY DATA**

**Area :**

**Orient**

**(Compliance Station)**

**Project :**

**Orient Mine No. 3**

**(conc. in  $\mu\text{g}/\text{cu.m.}$ )**

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	CO (mg/m <sup>3</sup> )	Dust Generating Source	Distance from DGS
12-Dec-25	Orient Mine No. 3	268	179	76	19.73	12.19	-	Coal Stockyard, Surface Bunker, Coal	About 200m
20-Dec-25	Orient Mine No. 3	320	177	84	15.59	35.76	-	Coal Stockyard, Surface Bunker, Coal	About 200m

*Test Report*  
 Authorised Signatory  
 CMPDI, RI-VII, LAB  
 BHUBANESWAR

MoEF Standards Notification dated 25th  
 September, 2009

500	250		120	120	02(8 Hours)
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*Januati*



सिंहमपीडी.एनई  
 2011 एनई  
**cmpdi**  
 Noise Control

**TABLE--**

**NOISE LEVEL MONITORING DATA**

AREA :

**Orient**

PROJECT :

**Orient Mine No.3**

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
11-Dec-25	Orient Mine No.3	52.2	41.8
26-Dec-25	Orient Mine No.3	49.3	40.7

MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 75dB(A) (Industrial)	10.00 PM -6.00 AM Leq 70dB(A) (Industrial)
MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 55dB(A) (Residential)	10.00 PM -6.00 AM Leq 45dB(A) (Residential)
MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 65dB(A) (Commercial)	10.00 PM -6.00 AM Leq 55dB(A) (Commercial)
MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 50dB(A) (Silence Zone)	10.00 PM -6.00 AM Leq 40dB(A) (Silence Zone)

*Authorised Signatory*  
**Authorised Signatory**  
**CMPDI, RI-VII, LAB**  
**BHUBANESWAR**

*Signature*





सीएमपीडीआई  
मिनी रान  
cmpdi  
Mini Ratan

## Drinking Water Quality Data Orient Area

Project / OCP	Orient Mine No. 3	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	Mine no 3 Filter Plant	Acceptable	Permissible
Date of Sampling	15-Dec-2025	Acceptable	Permissible
Colour(Hazen)	3	5	15
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	1	5
pH	7.52	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	62.4	200	600
Chloride(mg/L)	21.37	250	1000
Sulphate(mg/L)	36.84	200	400
Nitrate(mg/L)	<0.5	45	No relaxation
Total Hardness (Ca CO <sub>3</sub> )(mg/L)	108.86	200	600
Calcium(mg/L)	24.24	75	200
Fluoride(mg/L)	1.22	1	1.5
Total Dissolve Solid(mg/L)	164	500	2000
Copper(mg/L)	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	0.1	0.3
Iron(mg/L)	<0.1	1	No relaxation
Zinc(mg/L)	<0.04	5	15
Lead(mg/L)	<0.005	0.01	No relaxation
Cadmium(mg/L)	<0.001	0.003	No relaxation
Total Chromium (mg/L)	<0.01	0.05	No relaxation
Arsenic(mg/L)	<0.005	0.01	No relaxation
Boron(mg/L)	<0.2	0.5	2.4

*Dr. H. H. H. H.*  
Authorised Signatory  
CMPDI, RI-VII, LAB  
BHUBANESWAR

*J. S. S.*



सीएमपीडीआई  
रिसेच लैब  
cmpdi  
Mini Ratna

## Drinking Water Quality Data Orient Area

Project / OCP	Orient Mine No. 3	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	Mine no 3 Filter Plant	Acceptable	Permissible
Date of Sampling	15-Dec-2025	Acceptable	Permissible
Selenium(mg/L)	<0.005	0.01	No relaxation
Sodium(mg/L)	5.96		
Potassium(mg/L)	1.75		
Phenolics(mg/L)	<0.001	0.001	0.002
Residual Free Chlorine(mg/L)	<0.2	0.2	1
MPN (Index/100 ml)	Not Detected	-	-

*Authorised*  
Authorised Signatory  
CMPDI, RI-VII, LAB  
BHUBANESWAR

*Authorised*

**Environmental Monitoring Report  
For  
December -2025**

**Project: Orient Mine no. 4  
Area: Orient  
Coalfield: Ib Valley**



**Mahanadi Coalfields Limited**



**Central Mine Planning & Design Institute Ltd.**  
(A Subsidiary of Coal India Ltd.)

**Regional Institute-VII, Samantpuri, P.O : RRL, Bhubaneswar-761013 (Odisha)**  
[Assistance from Environment Division, CMPDI(HQs), Ranchi ]

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राष्ट्रीय प्रदूषण नियंत्रण बोर्ड  
भारत सरकार  
cmpdi  
भुवनेश्वर

Test Report

AMBIENT AIR QUALITY DATA

Area :

Orient

(Compliance Station)

Project :

Orient Mine No. 4

(conc. in  $\mu\text{g}/\text{cu.m.}$ )

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	CO (mg/m <sup>3</sup> )	Dust Generating Source	Distance from DGS
12-Dec-25	Orient Mine No. 4	297	195	80	16.74	37.97	-	Coal Transportation Road	About 300m
20-Dec-25	Orient Mine No. 4	334	194	89	18.07	20.16	-	Coal Transportation Road	About 300m

*For Transit*  
Authorised Signatory  
CMPDI RI-VII LAB  
BHUBANESHWAR

Ministry of Environment, Government of India  
Notification dated 25th September, 2000

500	250		120	120	92/8 Hours)
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*Jaswant*



सीएमपीडी  
 2008-09  
**cmpdi**  
 Bhubaneswar

**TABLE--**

**NOISE LEVEL MONITORING DATA**

AREA :

*Orient*

PROJECT :

*Orient Mine No.4*

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
11-Dec-25	Orient Mine No.4	50.6	42.4
26-Dec-25	Orient Mine No.4	52.5	42.2

*Hattarich*  
 Authorised Signatory  
 CMPDI III-VII, LAB  
 BHUBANESWAR

MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 75dB(A) (Industrial)	10.00 PM -6.00 AM Leq 70dB(A) (Industrial)
MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 55dB(A) (Residential)	10.00 PM -6.00 AM Leq 45dB(A) (Residential)
MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 65dB(A) (Commercial)	10.00 PM -6.00 AM Leq 55dB(A) (Commercial)
MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 50dB(A) (Silence Zone)	10.00 PM -6.00 AM Leq 40dB(A) (Silence Zone)

*Janaki*



सीएमपीडीआई  
2000 एन.ए.  
cmpdi  
भारत सरकार

TABLE--

**EFFLUENT QUALITY DATA**

Area :

Orient

(All dimensions are in mg/l unless otherwise stated except pH)

Project :

Orient Mine No. 4

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	TDS	DO	Remarks
15-Dec-25	Mine Sump of Mine No. 4	7.01	<4.0	23	16	-	-	-	

Hotkangal  
Authorized Signatory  
C.M.P.D.I. LAB  
BHOJANE SWAMI

Standard of effluents dated 25th September, 2000  
C.M.P.D.I. EP, Section 17, General standard for discharge  
of Environmental Pollutants Part A: Effluents

5.5-9.0	10	100	250	30
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Januati

**Environmental Monitoring Report  
For  
December -2025**

**Project: Hirakhand Bundia Mine  
Area: Orient  
Coalfield: Ib Valley**



**Mahanadi Coalfields Limited**



**सीएमपीडीआई**  
मिनी प्लान  
**cmpdi**  
Mini Ratna

**Central Mine Planning & Design Institute Ltd.**  
(A Subsidiary of Coal India Ltd.)

**Regional Institute-VII, Samantpuri, P.O : RRL, Bhubaneswar-751013 (Odisha)**  
[Assistance from Environment Division, CMPDI(HQs), Ranchi ]

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 Centre for  
 cmpdi  
 Environmental Monitoring

Test Report

**AMBIENT AIR QUALITY DATA**

Area : **Orient** (Compliance Station)

Project :

**HBI Mine**

(conc. in  $\mu\text{g}/\text{cu.m.}$ )

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	CO (mg/m <sup>3</sup> )	Dust Generating Source	Distance from DGS
12-Dec-25	HBI Mine	306	183	79	10.59	18.04	-	Coal Stockyard, Surface Bunker, Coal Transport	About 100m
12-Dec-25	Bundia Colony Pump House	293	167	74	11.10	21.83	-	Coal Stockyard, Surface Bunker, Coal Transport	About 150m
20-Dec-25	HBI Mine	315	175	80	12.99	38.68	-	Coal Stockyard, Surface Bunker, Coal Transport	About 100m
20-Dec-25	Bundia Colony Pump House	274	183	78	15.11	36.31	-	Coal Stockyard, Surface Bunker, Coal Transport	About 150m

*T. Jaisankar*  
 Authorised Signatory  
 CMPDI, RI-VII, LAB  
 BHUBANESWAR

MoEF Standards Notification dated 25th September, 2009	500	250		120	120	82(8 Hours)
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*Jaisankar*



**Test Report**

**AMBIENT AIR QUALITY DATA**

**Area :** **Orient** **(Reference Station)**

**Project :** **Hirakand Bundia Mine (HBM)** **(conc. in µg/cu.m.)**

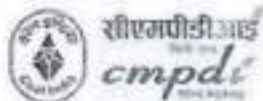
Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
03-Dec-25	Rampur Sub Area	221	87	49	18.24	30.21	Coal Stock And CT Road	About 1000m
03-Dec-25	Rampur Officers Guest House	227	82	51	11.64	26.98	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
04-Dec-25	Rampur Officers Guest House	241	85	54	9.09	31.49	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
04-Dec-25	Rampur Sub Area	204	81	43	15.95	17.92	Coal Stock And CT Road	About 1000m
10-Dec-25	Rampur Sub Area	192	77	41	17.66	16.15	Coal Stock And CT Road	About 1000m
10-Dec-25	Rampur Officers Guest House	232	92	47	12.43	16.29	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
11-Dec-25	Rampur Officers Guest House	218	95	46	10.95	24.11	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
11-Dec-25	Rampur Sub Area	213	85	44	13.31	19.24	Coal Stock And CT Road	About 1000m
18-Dec-25	Rampur Sub Area	197	86	46	15.66	20.83	Coal Stock And CT Road	About 1000m
18-Dec-25	Rampur Officers Guest House	243	94	53	12.43	26.12	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
19-Dec-25	Rampur Officers Guest House	207	87	48	11.12	37.83	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
19-Dec-25	Rampur Sub Area	213	89	49	13.63	37.36	Coal Stock And CT Road	About 1000m
24-Dec-25	Rampur Officers Guest House	227	94	51	13.49	34.55	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
24-Dec-25	Rampur Sub Area	223	93	50	14.85	26.13	Coal Stock And CT Road	About 1000m
25-Dec-25	Rampur Sub Area	243	95	56	13.13	20.16	Coal Stock And CT Road	About 1000m
25-Dec-25	Rampur Officers Guest House	218	82	44	18.77	23.65	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m

*A. Chatterjee*  
**Authorised Signatory**  
**SI-POL. RI-VII, LAB**  
**BHOPAL**

		100	60	80	80
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*Jaswanti*

## Test Report



## AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area :

Orient

Project :

Hirakand Bundia Mine (HBM)

Date of Sampling	Monitoring Station	Ammonia (NH <sub>3</sub> )	Ozone (O <sub>3</sub> )	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo(a)Pyrene	Benzene
		(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(mg/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(µg/m <sup>3</sup> )
03-Dec-25	Rampur Sub Area	<20.0	10.42	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
03-Dec-25	Rampur Officers Guest House	<20.0	15.73	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
04-Dec-25	Rampur Officers Guest House	<20.0	10.65	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
04-Dec-25	Rampur Sub Area	<20.0	21.07	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
10-Dec-25	Rampur Sub Area	<20.0	16.23	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
10-Dec-25	Rampur Officers Guest House	<20.0	21.32	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
11-Dec-25	Rampur Officers Guest House	<20.0	27.60	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
11-Dec-25	Rampur Sub Area	<20.0	16.72	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
18-Dec-25	Rampur Sub Area	<20.0	14.05	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
18-Dec-25	Rampur Officers Guest House	<20.0	19.87	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
19-Dec-25	Rampur Officers Guest House	<20.0	12.35	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
19-Dec-25	Rampur Sub Area	<20.0	21.80	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
24-Dec-25	Rampur Officers Guest House	<20.0	22.52	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
24-Dec-25	Rampur Sub Area	<20.0	15.98	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
25-Dec-25	Rampur Sub Area	<20.0	23.73	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
25-Dec-25	Rampur Officers Guest House	<20.0	13.32	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL

Authorised Signatory  
 CMDC, RI-VII, LAB  
 Bhubaneswar

400(24 hours)	180(hours)	1.0(24 hours)	6.0(Annual)	20(Annual)	02(8 hours)	01(annual)	05(annual)
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Janak



सीएमपीडीआई  
CMPDI  
भारत सरकार

TABLE--

**NOISE LEVEL MONITORING DATA**

AREA :

Orient

PROJECT :

HBI Mine

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
11-Dec-25	HBI Mine	59.3	53.8
11-Dec-25	Rampur Sub Area (Reported)	52.4	40.3
11-Dec-25	Bundia Colony Pump House	51.7	42.6
11-Dec-25	Rampur Officer's Guest House	49.5	40.9
26-Dec-25	HBI Mine	50.7	39.6
26-Dec-25	Rampur Sub Area (Reported)	52.8	40.6
26-Dec-25	Bundia Colony Pump House	52.6	40.1
26-Dec-25	Rampur Officer's Guest House	49.3	42.8

*Handwritten:* To the  
Authorized Signatory  
CMPDI, LAB  
BHUBANESWAR

MoEF Standard Notification dated 25th September, 2000	6.00 AM - 10.00 PM Leq 75dB(A) (Industrial)	10.00 PM - 6.00 AM Leq 70dB(A) (Industrial)
MoEF Standard Notification dated 25th September, 2000	6.00 AM - 10.00 PM Leq 55dB(A) (Residential)	10.00 PM - 6.00 AM Leq 45dB(A) (Residential)
MoEF Standard Notification dated 25th September, 2000	6.00 AM - 10.00 PM Leq 65dB(A) (Commercial)	10.00 PM - 6.00 AM Leq 55dB(A) (Commercial)
MoEF Standard Notification dated 25th September, 2000	6.00 AM - 10.00 PM Leq 50dB(A) (Silence Zone)	10.00 PM - 6.00 AM Leq 40dB(A) (Silence Zone)

*Handwritten:* Jamali



सीएमपीडी  
CMPDI

TABLE--

**EFFLUENT QUALITY DATA**

Area :

Orient

(All dimensions are in mg/l unless otherwise stated except pH)

Project :

HBI Mine

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	TDS	DO	Remarks
15-Dec-25	Mine Sump of HBM	7.06	<4.0	31	24	-	-	-	

*Fattanaish*  
Authorised Signatory  
CMPDI RI-VII, LAB  
CAMPUS SWAR

MofEF Standard Notification dated 25th September, 2000  
and MOEF Schedule VI, General standard for discharge  
of Environmental Pollutants Part A: Effluents

5.5-9.0	10	100	250	30
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*Jawal*



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मिनी प्लान  
cmpdi  
Mini Plan

## Drinking Water Quality Data Orient Area

Project / OCP	HBI Mine		Indian Drinking Standards (IS-10500):2012	
	Rampur Colony	HBI Water Filter Plant	Acceptable	Permissible
Monitoring Station				
Date of Sampling	15-Dec-2025	15-Dec-2025		
Colour(Hazen)	2	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	1	1	5
pH	7.80	7.89	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	112.32	112.32	200	600
Chloride(mg/L)	27.20	29.14	250	1000
Sulphate(mg/L)	12.6	10.71	200	400
Nitrate(mg/L)	0.53	<0.5	45	No relaxation
Total Hardness (Ca CO <sub>3</sub> )(mg/L)	116.93	112.90	200	600
Calcium(mg/L)	22.62	22.62	75	200
Fluoride(mg/L)	0.36	0.38	1	1.5
Total Dissolve Solid(mg/L)	182	178	500	2000
Copper(mg/L)	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	<0.04	0.1	0.3
Iron(mg/L)	<0.1	<0.1	1	No relaxation
Zinc(mg/L)	0.10	<0.04	5	15
Lead(mg/L)	<0.005	<0.005	0.01	No relaxation
Cadmium(mg/L)	<0.001	<0.001	0.003	No relaxation
Total Chromium (mg/L)	<0.01	<0.01	0.05	No relaxation
Arsenic(mg/L)	<0.005	<0.005	0.01	No relaxation
Boron(mg/L)	<0.2	<0.2	0.5	2.4

*Hattarick*  
Authorised Signatory  
CMPDI, RI-VII, LAB  
BHUBANESWAR

*Sumit*



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मिनी एरिया  
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## Drinking Water Quality Data Orient Area

Project / OCP	HBI Mine		Indian Drinking Standards (IS-10500):2012	
	Rampur Colony	HBI Water Filter Plant	Acceptable	Permissible
Monitoring Station				
Date of Sampling	15-Dec-2025	15-Dec-2025		
Selenium(mg/L)	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	7.16	8.24		
Potassium(mg/L)	2.25	1.10		
Phenolics(mg/L)	<0.001	<0.001	0.001	0.002
Residual Free Chlorine(mg/L)	<0.2	<0.2	0.2	1
MPN (Index/100 ml)	Not Detected	Not Detected	-	-

*Heffanick*  
Authorised Signatory  
CMPDI, RI-VII, LAB  
BHUBANESWAR

*Jamali*

**Environmental Monitoring Report  
For  
December -2025**

**Project: Himgir Rampur Colliery  
Area: Orient  
Coalfield: Ib Valley**



**Mahanadi Coalfields Limited**



**सीएमपीडीआई**  
मिनी रातन  
**cmpdi**  
Mini Ratna

**Central Mine Planning & Design Institute Ltd.**  
(A Subsidiary of Coal India Ltd.)

**Regional Institute-VII, Samantpuri, P.O : RRL, Bhubaneswar-751013 (Odisha)**  
[Assistance from Environment Division, CMPDI(HQs), Ranchi ]

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Test Report

AMBIENT AIR QUALITY DATA

Area :

Orient

(Compliance Station)

Project :

HRC

(conc. in  $\mu\text{g}/\text{cu.m.}$ )

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	CO (mg/m <sup>3</sup> )	Dust Generating Source	Distance from DGS
12-Dec-25	Near Rampur Colliery Check Post	319	197	83	12.54	25.41	-	Mining allied activities	About 500m
12-Dec-25	Near CHP HRC	270	184	75	12.99	33.16	-	Mining allied activities	About 500m
20-Dec-25	Near Rampur Colliery Check Post	293	177	80	15.71	30.02	-	Mining allied activities	About 500m
20-Dec-25	Near CHP HRC	305	178	83	10.58	39.29	-	Mining allied activities	About 500m

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Authorized Signatory

CMPDI MoEF Standards Publication dated 25th September 2000

500	250		120	120	02/8 Hours
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**AMBIENT AIR QUALITY DATA**

Area : **Orient** (Reference Station)

Project : **HRC** (conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
03-Dec-25	Rampur Sub Area (Reported only)	221	87	49	18.24	30.21	Coal Stock And CT Road	About 1000m
03-Dec-25	Rampur Officers Guest House (Reported only)	227	82	51	11.64	26.98	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
04-Dec-25	Rampur Officers Guest House (Reported only)	241	85	54	9.09	31.49	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
04-Dec-25	Rampur Sub Area (Reported only)	204	81	43	15.95	17.92	Coal Stock And CT Road	About 1000m
10-Dec-25	Rampur Sub Area (Reported only)	192	77	41	17.66	16.15	Coal Stock And CT Road	About 1000m
10-Dec-25	Rampur Officers Guest House (Reported only)	232	92	47	12.43	16.29	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
11-Dec-25	Rampur Officers Guest House (Reported only)	218	95	46	10.95	24.11	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
11-Dec-25	Rampur Sub Area (Reported only)	213	85	44	13.31	19.24	Coal Stock And CT Road	About 1000m
18-Dec-25	Rampur Sub Area (Reported only)	197	86	46	15.66	20.83	Coal Stock And CT Road	About 1000m
18-Dec-25	Rampur Officers Guest House (Reported only)	243	94	53	12.43	26.12	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
19-Dec-25	Rampur Officers Guest House (Reported only)	207	87	48	11.12	37.83	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
19-Dec-25	Rampur Sub Area (Reported only)	213	89	49	13.63	37.36	Coal Stock And CT Road	About 1000m
24-Dec-25	Rampur Officers Guest House (Reported only)	227	94	51	13.49	34.55	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
24-Dec-25	Rampur Sub Area (Reported only)	223	93	50	14.85	26.13	Coal Stock And CT Road	About 1000m
25-Dec-25	Rampur Sub Area (Reported only)	243	95	56	13.13	20.16	Coal Stock And CT Road	About 1000m
25-Dec-25	Rampur Officers Guest House (Reported only)	218	82	44	18.77	23.65	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m

Authorized Signatory  
 C/AN-10S, 2009  
 BHUBANESWAR

	100	60	80	80
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*Janaki*

**AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)**

Area : **Orient**

Project : **HRC**

Date of Sampling	Monitoring Station	Ammonia (NH <sub>3</sub> )	Ozone (O <sub>3</sub> )	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo(a)Pyrene	Benzene
		(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(µg/m <sup>3</sup> )
03-Dec-25	Rampur Sub Area (Reported only)	<20.0	10.42	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
03-Dec-25	Rampur Officers Guest House (Reported only)	<20.0	15.73	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
04-Dec-25	Rampur Officers Guest House (Reported only)	<20.0	10.65	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
04-Dec-25	Rampur Sub Area (Reported only)	<20.0	21.07	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
10-Dec-25	Rampur Sub Area (Reported only)	<20.0	16.23	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
10-Dec-25	Rampur Officers Guest House (Reported only)	<20.0	21.32	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
11-Dec-25	Rampur Officers Guest House (Reported only)	<20.0	27.60	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
11-Dec-25	Rampur Sub Area (Reported only)	<20.0	16.72	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
18-Dec-25	Rampur Sub Area (Reported only)	<20.0	14.05	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
18-Dec-25	Rampur Officers Guest House (Reported only)	<20.0	19.87	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
19-Dec-25	Rampur Officers Guest House (Reported only)	<20.0	12.35	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
19-Dec-25	Rampur Sub Area (Reported only)	<20.0	21.80	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
24-Dec-25	Rampur Officers Guest House (Reported only)	<20.0	22.52	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
24-Dec-25	Rampur Sub Area (Reported only)	<20.0	15.98	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
25-Dec-25	Rampur Sub Area (Reported only)	<20.0	23.73	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
25-Dec-25	Rampur Officers Guest House (Reported only)	<20.0	13.32	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL

*K. H. Sankh*  
 Authorized Signatory  
 Central Pollution Control Board, LAB  
 BHUBANESWAR

400(24 hours)	180(hours)	1.0(24 hours)	6.0(Annual)	20(Annual)	02(8 hours)	01(annual)	05(annual)
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*Janaka*



सीएमपीडी.आई  
 CMPDI  
 MAHARASHTRA

TABLE--

**NOISE LEVEL MONITORING DATA**

AREA :

Orient

PROJECT :

HRC

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
11-Dec-25	Near CHP HRC	50.4	34.8
11-Dec-25	Near Rampur Colliery Check Post	49.8	42.5
26-Dec-25	Near CHP HRC	51.5	39.3
26-Dec-25	Near Rampur Colliery Check Post	49.2	41.8

*Hattarank*  
 Author:  
 CMPDI, P. VII, LAB  
 BHUBANESWAR

MoEF Standard Notification dated 25th September, 2000	6.00 AM - 10.00 PM Leq 75dB(A) (Industrial)	10.00 PM - 6.00 AM Leq 70dB(A) (Industrial)
MoEF Standard Notification dated 25th September, 2000	6.00 AM - 10.00 PM Leq 55dB(A) (Residential)	10.00 PM - 6.00 AM Leq 45dB(A) (Residential)
MoEF Standard Notification dated 25th September, 2000	6.00 AM - 10.00 PM Leq 65dB(A) (Commercial)	10.00 PM - 6.00 AM Leq 55dB(A) (Commercial)
MoEF Standard Notification dated 25th September, 2000	6.00 AM - 10.00 PM Leq 50dB(A) (Silence Zone)	10.00 PM - 6.00 AM Leq 40dB(A) (Silence Zone)

*Janaki*

**Orient UG Mines**

- Orient Mine No. 1 & 2
- Orient Mine No. 3
- Orient Mine No. 4
- HBI Mine
- HRCUG Mine

**Legend**  
Air Monitoring Localities

Orient Mine No. 4  
Orient GM Office  
Orient Mine No. 3  
VIP Guest House, IB Valley  
Orient Mine No. 1 & 2  
Near Rampur Colliery Check Post  
Near CHP HRC  
Rampur Sub Area Rampur Officers Guest House  
Bundia Colony Pump House  
HBI Mine



100

**Environmental Monitoring Report  
For  
December-2025**

**Area: MCL HQ**

**Coalfield: Ib Valley**



**MCL**

**Mahanadi Coalfields Limited**



**सीएमपीडीआई**  
मिनी प्लान  
**cmpdi**  
Mini Plan

**Central Mine Planning & Design Institute Ltd.**  
(A Subsidiary of Coal India Ltd.)

**Regional Institute-VII, Samantpuri, P.O : RRL, Bhubaneswar-751013 (Odisha)**  
[Assistance from Environment Division, CMPDI(HQs), Ranchi ]

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रिपो रथ  
cmpdi  
Mini Ratna

## Drinking Water Quality Data MCL (HQ)

Project / OCP	MCL (HQ)		Indian Drinking Standards (IS-10500):2012	
	DAV School (Anand vihar)	Corporate Office (Jagrati Vihar)	Acceptable	Permissible
Monitoring Station	15-Dec-2025	15-Dec-2025		
Date of Sampling	15-Dec-2025	15-Dec-2025	Acceptable	Permissible
Colour(Hazen)	3	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	3	1	5
pH	7.90	7.87	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	87.36	83.2	200	600
Chloride(mg/L)	11.66	13.60	250	1000
Sulphate(mg/L)	29.8	28.92	200	400
Nitrate(mg/L)	0.53	<0.5	45	No relaxation
Total Hardness (Ca CO <sub>3</sub> )(mg/L)	96.77	96.77	200	600
Calcium(mg/L)	29.09	27.47	75	200
Fluoride(mg/L)	0.34	0.34	1	1.5
Total Dissolve Solid(mg/L)	162	158	500	2000
Copper(mg/L)	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	<0.04	0.1	0.3
Iron(mg/L)	<0.1	<0.1	1	No relaxation
Zinc(mg/L)	<0.04	<0.04	5	15
Lead(mg/L)	<0.005	<0.005	0.01	No relaxation
Cadmium(mg/L)	<0.001	<0.001	0.003	No relaxation
Total Chromium (mg/L)	<0.01	<0.01	0.05	No relaxation
Arsenic(mg/L)	<0.005	<0.005	0.01	No relaxation
Boron(mg/L)	<0.2	<0.2	0.5	2.4

*K. Nath*  
Authorised Signatory  
CMPDI, RI-VII, LAB  
BHUBANESWAR

*Jamunati*



सीएमपीडीआई  
सिनेरी लॉब  
cmpdi  
Mini Ratna

## Drinking Water Quality Data MCL (HQ)

Project / OCP	MCL (HQ)		Indian Drinking Standards (IS-10500):2012	
	DAV School (Anand vihar)	Corporate Office (Jagrati Vihar)	Acceptable	Permissible
Monitoring Station				
Date of Sampling	15-Dec-2025	15-Dec-2025		
Selenium(mg/L)	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	6.24	6.08		
Potassium(mg/L)	1.90	2.10		
Phenolics(mg/L)	<0.001	<0.001	0.001	0.002
Residual Free Chlorine(mg/L)	<0.2	<0.2	0.2	1
MPN (Index/100 ml)	Not Detected	Not Detected	-	-

*K. Ratna*  
Authorised Signatory  
CMPDI, RI-VII, LAB  
BHUBANESWAR

*J. Ratna*



सीएमपीडीआई  
मिनी रूल्स  
cmpdi  
Mini Rules

# Drinking Water Quality Data MCL (HQ)

Project / OCP	MCL(HQ)		Indian Drinking Standards (IS-10500):2012	
	Inlet to Water Treatment Plant (Anand Vihar)	Outlet to Water Treatment Plant (Anand Vihar)		
Monitoring Station				
Date of Sampling	15-Dec-2025	15-Dec-2025	Acceptable	Permissible
Colour(Hazen)	1	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	1	2	1	5
pH	7.85	7.88	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	87.36	87.36	200	600
Chloride(mg/L)	11.66	9.71	250	1000
Sulphate(mg/L)	32.86	31.8	200	400
Nitrate(mg/L)	<0.5	<0.5	45	No relaxation
Total Hardness (Ca CO <sub>3</sub> )(mg/L)	100.80	96.77	200	600
Calcium(mg/L)	27.47	24.24	75	200
Fluoride(mg/L)	0.39	0.36	1	1.5
Total Dissolve Solid(mg/L)	164	154	500	2000
Copper(mg/L)	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	<0.04	0.1	0.3
Iron(mg/L)	<0.1	<0.1	1	No relaxation
Zinc(mg/L)	<0.04	<0.04	5	15
Lead(mg/L)	<0.005	<0.005	0.01	No relaxation
Cadmium(mg/L)	<0.001	<0.001	0.003	No relaxation
Total Chromium (mg/L)	<0.01	<0.01	0.05	No relaxation
Arsenic(mg/L)	<0.005	<0.005	0.01	No relaxation
Boron(mg/L)	<0.2	<0.2	0.5	2.4

*T. Jaisankar*  
Authorised Signatory  
CMPDI, RI-VII, LAB  
BHUBANESWAR

*Jaisankar*



सीएमपीडीआई  
रिजिस्टर्ड  
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Mini Ratna

## Drinking Water Quality Data MCL (HQ)

Project / OCP	MCL(HQ)		Indian Drinking Standards (IS-10500):2012	
	Inlet to Water Treatment Plant (Anand Vihar)	Outlet to Water Treatment Plant (Anand Vihar)		
Monitoring Station			Acceptable	Permissible
Date of Sampling	15-Dec-2025	15-Dec-2025	0.01	No relaxation
Selenium(mg/L)	<0.005	<0.005		
Sodium(mg/L)	6.16	5.94		
Potassium(mg/L)	2.20	2.02		
Phenolics(mg/L)	<0.001	<0.001	0.001	0.002
Residual Free Chlorine(mg/L)	<0.2	<0.2	0.2	1
MPN (Index/100 ml)	Not Detected	Not Detected	-	-

*K. S. Sankar*  
Authorised Signatory  
CMPDI, RI-VII, LAB  
BHUBANESWAR

*J. S. Sankar*