

**Environmental Monitoring Report
Of
Ib Valley Area
For
June-2025**

Ib Valley Coalfield



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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CENTRAL POLLUTION CONTROL BOARD
CPCB

Test Report

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	Dust Generating Source	Distance from DGS
06-Jun-25	West of the Mine	188	87	39	16.38	29.21	Distance From 'y' Curve Railway Siding	About 450m
06-Jun-25	South of the Mine	165	70	33	17.50	19.95	Mine Haul Roads	About 400m
06-Jun-25	East of the Mine	167	72	34	14.12	33.62	Coal Transportation Road	About 500m
20-Jun-25	West of the Mine	185	80	36	14.28	20.34	Distance From 'y' Curve Railway Siding	About 450m
20-Jun-25	South of the Mine	178	85	37	10.97	18.79	Mine Haul Roads	About 400m
20-Jun-25	East of the Mine	172	84	38	16.17	29.62	Coal Transportation Road	About 500m

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CMPDI, RI-VII, LAB
BHUBANESWAR

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MoEF Standards Notification dated 25th
September, 2000

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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	SO2	NOx	Dust Generating Source	Distance from DGS
06-Jun-25	Near South Coal Stock	179	76	35	13.94	20.71	Mining Activities, Coal Transportation	About 500m
06-Jun-25	Near Project Office	170	70	33	17.47	14.59	Domestic, OCP, Transportation	About 500m
20-Jun-25	Near South Coal Stock	180	83	37	11.37	27.78	Mining Activities, Coal Transportation	About 500m
20-Jun-25	Near Project Office	184	81	36	12.44	19.85	Domestic, OCP, Transportation	About 500m

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MoEF Standards Notification dated 25th
 September, 2000

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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
02-Jun-25	Kudaloi Village	113	43	22	12.47	27.20		
03-Jun-25	Kudaloi Village	137	53	27	14.78	39.48		
04-Jun-25	Khokelmal (Reported only)	141	53	27	16.26	26.48	Railway siding	About 1000m
05-Jun-25	Khokelmal (Reported only)	131	48	25	13.89	19.29	Railway siding	About 1000m
09-Jun-25	Kudaloi Village	118	38	21	16.98	14.09		
10-Jun-25	Kudaloi Village	122	45	24	10.59	19.69		
11-Jun-25	Khokelmal (Reported only)	114	38	21	12.37	12.55	Railway siding	About 1000m
12-Jun-25	Khokelmal (Reported only)	119	45	24	11.32	16.37	Railway siding	About 1000m
16-Jun-25	Kudaloi Village	113	48	22	12.45	20.39		
17-Jun-25	Kudaloi Village	129	52	25	13.44	27.73		
18-Jun-25	Khokelmal (Reported only)	137	52	28	14.78	25.24	Railway siding	About 1000m
19-Jun-25	Khokelmal (Reported only)	154	67	31	16.98	27.40	Railway siding	About 1000m
23-Jun-25	Kudaloi Village	109	46	21	11.00	27.07		
24-Jun-25	Kudaloi Village	153	62	30	12.73	23.42		
25-Jun-25	Khokelmal (Reported only)	133	50	27	10.59	23.47	Railway siding	About 1000m
26-Jun-25	Khokelmal (Reported only)	125	42	24	11.69	20.62	Railway siding	About 1000m
27-Jun-25	Kudaloi Village	133	55	26	10.75	18.48		
28-Jun-25	Kudaloi Village	115	42	20	12.99	23.43		

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*NAAQS, 2009

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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
02-Jun-25	VIP Guest House IB Valley	155	57	29	15.79	29.63	Coal Stock Yard, Surface Bunker, Coal	About 800m
03-Jun-25	VIP Guest House IB Valley	134	49	26	12.98	31.96	Coal Stock Yard, Surface Bunker, Coal	About 800m
04-Jun-25	Khokelmal	141	53	27	16.26	26.48	Railway siding	About 1000m
04-Jun-25	Chuakani	117	40	22	20.30	38.93	Transportation	About 300m
05-Jun-25	Chuakani	143	53	27	14.27	28.51	Transportation	About 300m
05-Jun-25	Khokelmal	131	48	25	13.89	19.29	Railway siding	About 1000m
09-Jun-25	VIP Guest House IB Valley	117	45	24	13.08	14.97	Coal Stock Yard, Surface Bunker, Coal	About 800m
10-Jun-25	VIP Guest House IB Valley	143	53	27	17.54	24.71	Coal Stock Yard, Surface Bunker, Coal	About 800m
11-Jun-25	Chuakani	163	59	30	20.94	38.37	Transportation	About 300m
11-Jun-25	Khokelmal	114	38	21	12.37	12.55	Railway siding	About 1000m
12-Jun-25	Chuakani	152	55	28	11.45	38.83	Transportation	About 300m
12-Jun-25	Khokelmal	119	45	24	11.32	16.37	Railway siding	About 1000m
16-Jun-25	VIP Guest House IB Valley	155	58	28	17.46	22.97	Coal Stock Yard, Surface Bunker, Coal	About 800m
17-Jun-25	VIP Guest House IB Valley	145	54	27	13.19	23.48	Coal Stock Yard, Surface Bunker, Coal	About 800m
18-Jun-25	Chuakani	121	50	24	14.10	28.79	Transportation	About 300m
18-Jun-25	Khokelmal	137	52	28	14.78	25.24	Railway siding	About 1000m
19-Jun-25	Khokelmal	154	67	31	16.98	27.40	Railway siding	About 1000m
19-Jun-25	Chuakani	145	55	29	13.18	22.59	Transportation	About 300m
23-Jun-25	VIP Guest House IB Valley	140	45	26	15.75	28.10	Coal Stock Yard, Surface Bunker, Coal	About 800m
24-Jun-25	VIP Guest House IB Valley	112	37	19	15.60	23.68	Coal Stock Yard, Surface Bunker, Coal	About 800m
25-Jun-25	Chuakani	129	48	23	11.78	18.21	Transportation	About 300m
25-Jun-25	Khokelmal	133	50	27	10.59	23.47	Railway siding	About 1000m

*NAAQS, 2009		100	60	80	80
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Project :

Lajkura OCP

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

<i>Date of Sampling</i>	<i>Monitoring Station</i>	<i>SPM</i>	<i>PM10</i>	<i>PM2.5</i>	<i>SO2</i>	<i>NOx</i>	<i>Dust Generating Source(DGS)</i>	<i>Distance from DGS</i>
26-Jun-25	Chuakani	113	41	19	15.99	21.97	Transportation	About 300m
26-Jun-25	Khokelmal	125	42	24	11.69	20.62	Railway siding	About 1000m
27-Jun-25	VIP Guest House IB Valley	119	44	23	10.91	19.33	Coal Stock Yard, Surface Bunker, Coal	About 800m
28-Jun-25	VIP Guest House IB Valley	150	59	28	14.17	21.30	Coal Stock Yard, Surface Bunker, Coal	About 800m

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: IB Valley

Project	Samaleswari OCP							
Monitoring Station	Khokelmal (Reported Only)							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (α) Pyrene	Benzen e
	(μg/m ³)	(μg/m ³)	(μg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)	(ng/m ³)	(μg/m ³)
04-Jun-2025	<20.0	19.83	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
05-Jun-2025	<20.0	23.30	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
11-Jun-2025	<20.0	25.28	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
12-Jun-2025	<20.0	16.62	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
18-Jun-2025	<20.0	18.10	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
19-Jun-2025	<20.0	22.82	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
25-Jun-2025	<20.0	12.40	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
26-Jun-2025	<20.0	27.02	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
Standard	400 (24hours)	180 (1 hour)	1.0 (24hours)	6.0 (Annual)	20 (Annual)	02 (8 hours)	01(annual)	05(annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: IB Valley

Project	Samleswari OCP							
Monitoring Station	Rampur Sub Area (Reported Only)							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (α) Pyrene	Benzene
	(μg/m ³)	(μg/m ³)	(μg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)	(ng/m ³)	(μg/m ³)
04-Jun-2025	<20.0	23.80	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
05-Jun-2025	<20.0	18.85	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
11-Jun-2025	<20.0	21.07	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
12-Jun-2025	<20.0	17.35	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
18-Jun-2025	<20.0	17.60	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
19-Jun-2025	<20.0	13.88	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
25-Jun-2025	<20.0	16.87	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
26-Jun-2025	<20.0	15.87	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
Standard	400 (24hours)	180 (hour)	1.0 (24hours)	6.0 (Annual)	20 (Annual)	02 (8 hours)	01(annual)	05(annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: IB Valley

Project	Lajkura OCP							
Monitoring Station	VIP Guest House, IB Valley							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (α) Pyrene	Benzen e
	(μg/m ³)	(μg/m ³)	(μg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)	(ng/m ³)	(μg/m ³)
02-Jun-2025	<20.0	22.07	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
03-Jun-2025	<20.0	19.68	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
09-Jun-2025	<20.0	26.28	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
10-Jun-2025	<20.0	21.32	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
16-Jun-2025	<20.0	17.60	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
17-Jun-2025	<20.0	14.88	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
23-Jun-2025	<20.0	15.87	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
24-Jun-2025	<20.0	18.85	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
27-Jun-2025	<20.0	16.92	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
28-Jun-2025	<20.0	17.32	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
Standard	400 (24hours)	180 (hour)	1.0 (24hours)	6.0 Annual	20 (Annual)	02 (8 hours)	01(annual)	05(annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: IB Valley

Project	Lajkura OCP							
Monitoring Station	Khokelmal							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (α) Pyrene	Benzene
	(μg/m ³)	(μg/m ³)	(μg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)	(ng/m ³)	(μg/m ³)
04-Jun-2025	<20.0	19.83	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
05-Jun-2025	<20.0	23.30	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
11-Jun-2025	<20.0	25.28	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
12-Jun-2025	<20.0	16.62	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
18-Jun-2025	<20.0	18.10	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
19-Jun-2025	<20.0	22.82	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
25-Jun-2025	<20.0	12.40	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
26-Jun-2025	<20.0	27.02	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
Standard	400 (24hours)	180 (1 hour)	1.0 (24hours)	6.0 (Annual)	20 (Annual)	02 (8 hours)	01(annual)	05(annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: IB Valley

Project	Lajkura OCP							
Monitoring Station	Chukani							
Date of sampling	Ammonia (NH ₃) ($\mu\text{g}/\text{m}^3$)	Ozone (O ₃) ($\mu\text{g}/\text{m}^3$)	Lead (Pb) ($\mu\text{g}/\text{m}^3$)	Arsenic (As) (ng/m^3)	Nickel (Ni) (ng/m^3)	CO (mg/m^3)	Benzo (a) Pyrene (ng/m^3)	Benzene ($\mu\text{g}/\text{m}^3$)
04-Jun-2025	<20.0	13.63	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
05-Jun-2025	<20.0	14.63	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
11-Jun-2025	<20.0	26.53	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
12-Jun-2025	<20.0	24.55	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
18-Jun-2025	<20.0	24.30	<0.1	<1.0	<1.0	0.2	BQL(QL=0.7)	BQL
19-Jun-2025	<20.0	21.57	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
25-Jun-2025	<20.0	19.58	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
26-Jun-2025	<20.0	15.12	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
Standard	400 (24hours)	180 (hour)	1.0 (24hours)	6.0 (Annual)	20 (Annual)	02 (8 hours)	01(annual)	05(annual)

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Authorized Signatory
CMPDI, RI-VII, LAB
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CMODI
Central Mine Directorate

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NOISE LEVEL MONITORING DATA

AREA :

Ib Valley

PROJECT :

Samleswari OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
02-Jun-25	South of the Mine	62.1	56.5
02-Jun-25	West of the Mine	60.4	58.6
02-Jun-25	East of the Mine	58.9	53.2
02-Jun-25	Kudaloi Village	52.1	42.9
02-Jun-25	Rampur Sub Area	51.9	42.1
02-Jun-25	Khokelmal (Reported Only)	51.2	43.8
23-Jun-25	Kudaloi Village	51.2	40.9
23-Jun-25	South of the Mine	60.8	59.4
23-Jun-25	West of the Mine	62.5	58.6
23-Jun-25	Rampur Sub Area	51.2	42.4
23-Jun-25	East of the Mine	64.7	60.3
23-Jun-25	Khokelmal (Reported Only)	59.7	42.6

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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CMODI, RI-VII, LAB
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NOISE LEVEL MONITORING DATA

AREA :

Ib Valley

PROJECT :

Lajkura OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
02-Jun-25	Near Project Office	66.4	60.7
02-Jun-25	Near South Coal Stock	68.2	57.9
02-Jun-25	VIP Guest House, IB Valley	51.8	42.9
02-Jun-25	Khokelmal	51.2	43.8
02-Jun-25	Chuakani	50.9	42.7
23-Jun-25	Near South Coal Stock	68.3	65.2
23-Jun-25	Near Project Office	65.6	62.4
23-Jun-25	VIP Guest House, IB Valley	50.4	40.9
23-Jun-25	Chuakani	50.4	40.4
23-Jun-25	Khokelmal	59.7	42.6

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 :

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
12-Jun-25	Outlet of ETP	-	-	-	-	-	-	-	Under maintenance
12-Jun-25	Inlet of ETP	-	-	-	-	-	-	-	Under maintenance
12-Jun-25	Mine Sump Water	6.74	<4.0	28	16	-	-	-	
27-Jun-25	Inlet of ETP	6.37	<4.0	32	20	-	-	-	
27-Jun-25	Outlet of ETP	6.95	<4.0	21	24	-	-	-	

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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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Water Testing

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
12-Jun-25	Discharge of Hospital	7.22	<4.0	29	32	<2	-	-	

K. Jaiswal
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Jaiswal

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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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
12-Jun-25	STP Outlet	7.77	-	17	-	<2	-	-	58
12-Jun-25	STP Inlet	7.47	-	37	-	<2	-	-	110
27-Jun-25	STP Inlet	6.57	-	33	-	<2	-	-	94
27-Jun-25	STP Outlet	8.46	-	27	-	<2	-	-	63

Kattamanchi
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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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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	Remarks
12-Jun-25	Mine Sump Water	3.55	<4.0	23	20	-	-	-	
12-Jun-25	Lajkura Railway Siding	7.79	<4.0	68	72	-	-	-	
12-Jun-25	Inlet of ETP	6.81	<4.0	57	64	-	-	-	
12-Jun-25	Outlet of ETP	7.09	<4.0	49	56	-	-	-	
27-Jun-25	Inlet of ETP	6.00	<4.0	40	48	-	-	-	
27-Jun-25	Outlet of ETP	7.39	<4.0	36	44	-	-	-	
27-Jun-25	Lajkura Railway Siding	6.95	<4.0	72	128	-	-	-	

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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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कंपोडि
LAB TESTING

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
12-Jun-25	STP Outlet	7.22	-	26	-	<2	-	-	70
12-Jun-25	STP Inlet	7.10	-	38	-	<2	-	-	120
27-Jun-25	STP Outlet	6.97	-	23	-	<2	-	-	70
27-Jun-25	STP Inlet	7.41	-	29	-	<2	-	-	110

Fattima L
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Ints

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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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	13-May-2025	
pH	6.98	5.5 - 9.0
Total Hardness (asCaCO ₃),mg/L	660	4.0
Total Dissolved Solids, mg/L	996	10
Odour	Unobjectionable	-
Colour(Hazen)	3	-
Temperature(°C)	30.4	Shall not exceed 5 °C above the receiving temperature
Nitrate Nitrogen(mg/L)(As N)	2.47	10
Ammonical Nitrogen , mg/l (As N)	4.16	50
Total Kjeldhal Nitrogen, mg/l (As N)	7.76	100
Sulphide (mg/L)	<0.1	2
BOD [3 days at 27°C] (mg/L)	<2	30
Fluoride(mg/L)	0.56	2
Copper(mg/L)	<0.03	3
Manganese(mg/L)	1.5	2
Iron(mg/L)	<0.1	3
Zinc(mg/L)	0.04	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)	<0.02	3
Arsenic, mg/l	<0.005	0.2
Selenium (mg/L)	<0.005	0.05
Dissolved Phosphate(mg/L)	<4	5
Phenolics (mg/L)	<0.001	1

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Effluent Quality (all Parameter): - Ib Valley Area

Project (OCP / UG)	Lajkura OCP			MoEF-Sch-VI Standards
	Outlet of MDTP	Lajkura Railway Siding	Mine Sump Water	
NAME OF THE STATION	13-May-2025	13-May-2025	13-May-2025	
Date of Sampling	13-May-2025	13-May-2025	13-May-2025	
pH	4.15	7.86	3.71	
Total Hardness (asCaCO ₃),mg/L	592	172	592	4.0
Total Dissolved Solids, mg/L	885	253	800	10
Odour	Unobjectionable	Unobjectionable	Unobjectionable	-
Colour(Hazen)	2	3	4	-
Temperature(°C)	31.2	32.3	30.9	Shall not exceed 5 °C above the receiving temperature
Nitrate Nitrogen(mg/L)(As N)	4.01	<0.5	4.01	10
Ammonical Nitrogen , mg/l (As N)	5.76	0.53	0.46	50
Total Kjeldhal Nitrogen, mg/l (As N)	8.87	2.21	3.32	100
Sulphide (mg/L)	<0.1	<0.1	<0.1	2
BOD [3 days at 27°C] (mg/L)	<2	<2	<2	30
Fluoride(mg/L)	0.60	0.85	0.73	2
Copper(mg/L)	<0.03	<0.03	<0.03	3
Manganese(mg/L)	2.01	<0.04	2.14	2
Iron(mg/L)	<0.1	<0.1	<0.1	3
Zinc(mg/L)	0.85	<0.04	0.92	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)	<0.02	<0.02	<0.02	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	<4	<4	5
Phenolics (mg/L)	<0.001	<0.001	<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		
Monitoring Station				
Date of Sampling	12-Jun-2025	12-Jun-2025	Acceptable	Permissible
Colour(Hazen)	3	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	1	2	1	5
pH	6.44	6.80	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	80	96	200	600
Chloride(mg/L)	24	20	250	1000
Sulphate(mg/L)	82.16	93.72	200	400
Nitrate(mg/L)	10.56	13.72	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	96	92	200	600
Calcium(mg/L)	24.0	22.4	75	200
Fluoride(mg/L)	0.56	0.65	1	1.5
Total Dissolve Solid(mg/L)	195	186	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	0.005	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	Samleswari OCP			Indian Drinking Standards (IS-10500):2012	
	Monitoring Station	Inlet Water from IWSS, IB Valley Area	Outlet Water from IWSS, IB Valley Area		
Date of Sampling	12-Jun-2025	12-Jun-2025	12-Jun-2025	Acceptable	Permissible
Colour(Hazen)	1	2	3	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	1	3	1	1	5
pH	6.43	6.81	6.85	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	128	88	132	200	600
Chloride(mg/L)	26	16	12	250	1000
Sulphate(mg/L)	20.31	28.12	9.37	200	400
Nitrate(mg/L)	<0.5	<0.5	18.26	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	216	60	92	200	600
Calcium(mg/L)	40	35.2	22.4	75	200
Fluoride(mg/L)	0.40	0.44	0.48	1	1.5
Total Dissolve Solid(mg/L)	340	130	194	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 IB Valley Area

Project / OCP	Samaleswari OCP		Indian Drinking Standards (IS-10500):2012	
	Well Water From Kudopali	Tap Water From Samaleswari OCP Colony		
Monitoring Station				
Date of Sampling	12-Jun-2025	12-Jun-2025	Acceptable	Permissible
Selenium(mg/L)	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	15.26	14.83		
Potassium(mg/L)	2.16	3.91		
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	-	-

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	12-Jun-2025	12-Jun-2025	12-Jun-2025	Acceptable	Permissible
Selenium(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	20.95	12.35	15.01		
Potassium(mg/L)	2.52	1.74	4.09		
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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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		
Monitoring Station				
Date of Sampling	12-Jun-2025	12-Jun-2025	Acceptable	Permissible
Colour(Hazen)	2	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	3	1	5
pH	4.96	6.40	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	4	160	200	600
Chloride(mg/L)	10	40	250	1000
Sulphate(mg/L)	5.76	33.36	200	400
Nitrate(mg/L)	11.37	20.56	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	20	220	200	600
Calcium(mg/L)	4.8	48	75	200
Fluoride(mg/L)	0.65	0.52	1	1.5
Total Dissolve Solid(mg/L)	67	400	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

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J. J. J. J.



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Drinking Water Quality Data IB Valley Area

Project / OCP	Lajkura OCP		Indian Drinking Standards (IS-10500):2012	
	Chhualibera Village Well Water	VIP Guest House Tap Water		
Monitoring Station				
Date of Sampling	12-Jun-2025	12-Jun-2025	Acceptable	Permissible
Colour(Hazen)	4	4	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	4	3	1	5
pH	5.1	7.13	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	12	80	200	600
Chloride(mg/L)	6	6	250	1000
Sulphate(mg/L)	<2	17.34	200	400
Nitrate(mg/L)	6.28	<0.5	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	16	88	200	600
Calcium(mg/L)	4.8	16	75	200
Fluoride(mg/L)	0.76	<0.3	1	1.5
Total Dissolve Solid(mg/L)	60	172	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)	0.10	<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

T. J. J. J.
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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		
Monitoring Station				
Date of Sampling	12-Jun-2025	12-Jun-2025	Acceptable	Permissible
Selenium(mg/L)	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	12.94	24.58		
Potassium(mg/L)	1.94	1.95		
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	-	-

Project / OCP	Lajkura OCP		Indian Drinking Standards (IS-10500):2012	
	Chhualiberna Village Well Water	VIP Guest House Tap Water		
Monitoring Station				
Date of Sampling	12-Jun-2025	12-Jun-2025	Acceptable	Permissible
Selenium(mg/L)	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	13.13	15.79		
Potassium(mg/L)	1.98	3.7		
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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Piezometer Water Quality Data: - Ib valley Area

Project / OCP	Samleswari	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	MIP 04 (Village Kutabaga-Believers church school)		
Date of Sampling	29-May-25	Acceptable	Permissible
Colour(Hazen)	2	5	15
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	1	1	5
pH	7.63	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	84.11	200	600
Chloride(mg/L)	15.66	250	1000
Sulphate(mg/L)	32.21	200	400
Nitrate(mg/L)	<0.50	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	79.58	200	600
Calcium(mg/L)	20.76	75	200
Fluoride(mg/L)	0.42	1	1.5
Total Dissolve Solid(mg/L)	162	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	0.3	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	0.05
Selenium (mg/L)	<0.005	0.01	No relaxation
Boron(mg/L)	<0.2	0.5	1
Sodium mg/L	14.68	-	-
Potassium mg/L	0.6	-	-
Phenolics (mg/L)	<0.001	0.001	0.002
Residual Free Chlorine (mg/L)	<0.2	0.2	1
MPN (Index/100ml)	Not Detected	-	-

Tatamati
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Piezometer Water Quality Data: - Ib valley Area

Project / OCP	Lajkura	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	MIP 02 (Jamkani Village High school (Gumadera))	Acceptable	Permissible
Date of Sampling	27-May-25	Acceptable	Permissible
Colour(Hazen)	2	5	15
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	1	5
pH	7.03	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	173.16	200	600
Chloride(mg/L)	15.66	250	1000
Sulphate(mg/L)	24.42	200	400
Nitrate(mg/L)	<0.50	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	119.36	200	600
Calcium(mg/L)	17.57	75	200
Fluoride(mg/L)	0.56	1	1.5
Total Dissolve Solid(mg/L)	226	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	0.3	No relaxation
Zinc(mg/L)	6.58	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	0.05
Selenium (mg/L)	<0.005	0.01	No relaxation
Boron(mg/L)	<0.2	0.5	1
Sodium mg/L	14.85	-	-
Potassium mg/L	4.56	-	-
Phenolics (mg/L)	<0.001	0.001	0.002
Residual Free Chlorine (mg/L)	<0.2	0.2	1
MPN (Index/100ml)	Not Detected	-	-

Jatank
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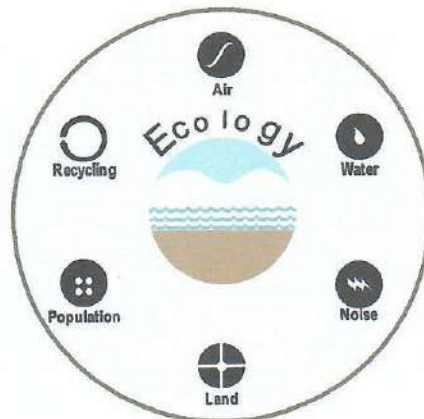
Jatank

**Environmental Monitoring Report
Of
Lakhanpur Area
For
June-2025**

Ib Valley Coalfield



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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 2010
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 NEW DELHI

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	Dust Generating Source	Distance from DGS
07-Jun-25	West of Lakhanpur Quarry Near Solada	174	76	35	8.90	18.53	Mining Activities	About 500m
07-Jun-25	Kirulbal Village	173	70	34	12.10	31.75	Mining Activities	About 500m
07-Jun-25	BOCM Workshop	171	76	35	10.79	29.66	Mining Activities	About 500m
07-Jun-25	Lilari Magazine House	189	86	39	10.75	25.85	Coal Transportation	About 500m
20-Jun-25	Kirulbal Village	177	88	39	12.99	19.94	Mining Activities	About 500m
20-Jun-25	Lilari Magazine House	203	95	42	14.40	21.77	Coal Transportation	About 500m
30-Jun-25	West of Lakhanpur Quarry Near Solada	196	91	39	14.42	27.14	Mining Activities	About 500m
30-Jun-25	BOCM Workshop	170	81	37	11.94	21.88	Mining Activities	About 500m

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MoEF Standards Notification dated 25th
 September, 2000

500	250		120	120
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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
04-Jun-25	Ardhapara Village South East of Mine	155	62	30	13.37	16.33		
04-Jun-25	Barihapali Village South West of Mine	118	40	22	14.93	15.52	Domestic Anthropogenic Source	
04-Jun-25	Ramada Village South of Mine	110	40	21	16.00	26.15	Domestic Anthropogenic Source	
04-Jun-25	Kadam Rehab Centre East of Mine	156	61	30	15.06	18.13	Mining Activities	About 2km
04-Jun-25	Lakhanpur Police Station West of Mine	119	42	23	12.45	29.01	Mining Activities	About 1.6km
04-Jun-25	Gumadera Village North of Mine	139	51	27	8.19	33.42	Domestic Source and Mining Activities	About 3km
05-Jun-25	Bartap Village North West of Mine	131	48	25	14.18	31.17	Domestic Anthropogenic Source	
05-Jun-25	Ardhapara Village South East of Mine	141	53	27	16.78	13.40		
05-Jun-25	Ramada Village South of Mine	129	48	25	10.34	37.07	Domestic Anthropogenic Source	
05-Jun-25	Barihapali Village South West of Mine	133	53	26	14.37	17.27	Domestic Anthropogenic Source	
05-Jun-25	Gumadera Village North of Mine	120	45	24	13.54	31.57	Domestic Source and Mining Activities	About 3km
05-Jun-25	Kadam Rehab Centre East of Mine	112	38	21	17.77	33.96	Mining Activities	About 2km
05-Jun-25	Lakhanpur Police Station West of Mine	135	51	26	13.44	38.02	Mining Activities	About 1.6km
06-Jun-25	Bartap Village North West of Mine	116	38	21	12.51	33.56	Domestic Anthropogenic Source	
11-Jun-25	Kadam Rehab Centre East of Mine	135	51	26	12.15	24.49	Mining Activities	About 2km
11-Jun-25	Lakhanpur Police Station West of Mine	115	42	22	11.00	28.98	Mining Activities	About 1.6km
11-Jun-25	Gumadera Village North of Mine	153	57	29	18.10	26.84	Domestic Source and Mining Activities	About 3km
11-Jun-25	Ramada Village South of Mine	118	45	24	10.39	23.17	Domestic Anthropogenic Source	
11-Jun-25	Bartap Village North West of Mine	135	51	26	19.42	35.58	Domestic Anthropogenic Source	
11-Jun-25	Barihapali Village South West of Mine	163	61	30	18.26	37.34	Domestic Anthropogenic Source	
11-Jun-25	Ardhapara Village South East of Mine	132	48	25	10.43	19.10		
12-Jun-25	Ramada Village South of Mine	114	41	22	13.90	22.64	Domestic Anthropogenic Source	

*NAAQS,2009

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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
12-Jun-25	Kadam Rehab Centre East of Mine	150	55	28	10.60	21.75	Mining Activities	About 2km
12-Jun-25	Bartap Village North West of Mine	164	62	30	16.72	25.92	Domestic Anthropogenic Source	
12-Jun-25	Barihapali Village South West of Mine	144	53	27	12.17	20.94	Domestic Anthropogenic Source	
12-Jun-25	Lakhanpur Police Station West of Mine	108	36	20	12.73	24.84	Mining Activities	About 1.6km
12-Jun-25	Ardhapara Village South East of Mine	128	45	24	12.50	17.73		
12-Jun-25	Gumadera Village North of Mine	116	38	21	10.43	24.06	Domestic Source and Mining Activities	About 3km
18-Jun-25	Barihapali Village South West of Mine	112	35	18	12.79	27.10	Domestic Anthropogenic Source	
18-Jun-25	Kadam Rehab Centre East of Mine	165	57	29	11.64	23.92	Mining Activities	About 2km
18-Jun-25	Ramada Village South of Mine	159	66	31	13.22	29.68	Domestic Anthropogenic Source	
18-Jun-25	Bartap Village North West of Mine	130	43	22	15.06	29.05	Domestic Anthropogenic Source	
18-Jun-25	Gumadera Village North of Mine	126	48	25	11.29	22.07	Domestic Source and Mining Activities	About 3km
18-Jun-25	Lakhanpur Police Station West of Mine	139	54	28	13.94	17.88	Mining Activities	About 1.6km
18-Jun-25	Ardhapara Village South East of Mine	147	51	28	13.40	23.86		
19-Jun-25	Kadam Rehab Centre East of Mine	138	51	25	14.72	19.74	Mining Activities	About 2km
19-Jun-25	Lakhanpur Police Station West of Mine	127	45	25	11.09	23.02	Mining Activities	About 1.6km
19-Jun-25	Gumadera Village North of Mine	136	53	27	16.86	23.37	Domestic Source and Mining Activities	About 3km
19-Jun-25	Bartap Village North West of Mine	136	47	25	13.86	26.04	Domestic Anthropogenic Source	
19-Jun-25	Ramada Village South of Mine	138	45	24	14.84	22.05	Domestic Anthropogenic Source	
19-Jun-25	Ardhapara Village South East of Mine	134	44	25	16.83	32.46		
19-Jun-25	Barihapali Village South West of Mine	139	48	26	13.65	17.57	Domestic Anthropogenic Source	
25-Jun-25	Lakhanpur Police Station West of Mine	122	41	24	13.66	23.51	Mining Activities	About 1.6km
25-Jun-25	Kadam Rehab Centre East of Mine	117	46	22	13.79	25.26	Mining Activities	About 2km
25-Jun-25	Gumadera Village North of Mine	116	40	21	16.91	33.43	Domestic Source and Mining Activities	About 3km
25-Jun-25	Ramada Village South of Mine	128	40	23	12.80	18.75	Domestic Anthropogenic Source	
25-Jun-25	Barihapali Village South West of Mine	154	59	30	11.77	27.82	Domestic Anthropogenic Source	

*NAAQS, 2009

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

<i>Date of Sampling</i>	<i>Monitoring Station</i>	<i>SPM</i>	<i>PM10</i>	<i>PM2.5</i>	<i>SO2</i>	<i>NOx</i>	<i>Dust Generating Source(DGS)</i>	<i>Distance from DGS</i>
25-Jun-25	Bartap Village North West of Mine	129	44	23	13.14	23.31	Domestic Anthropogenic Source	
25-Jun-25	Ardhapara Village South East of Mine	169	64	31	12.61	21.13		
26-Jun-25	Barihapali Village South West of Mine	115	37	19	14.51	28.02	Domestic Anthropogenic Source	
26-Jun-25	Kadam Rehab Centre East of Mine	110	37	19	16.44	21.30	Mining Activities	About 2km
26-Jun-25	Bartap Village North West of Mine	156	55	27	15.35	20.57	Domestic Anthropogenic Source	
26-Jun-25	Lakhanpur Police Station West of Mine	112	37	20	15.99	25.95	Mining Activities	About 1.6km
26-Jun-25	Ardhapara Village South East of Mine	122	40	23	12.59	19.34		
26-Jun-25	Ramada Village South of Mine	144	53	26	16.92	33.52	Domestic Anthropogenic Source	
26-Jun-25	Gumadera Village North of Mine	129	46	24	11.60	21.26	Domestic Source and Mining Activities	About 3km

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*NAAQS, 2009

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Lakhanpur

Project	LBL OCP							
Monitoring Station	Kadam Rehab Centre East of Mine							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (α) Pyrene	Benzene
	(µg/m ³)	(µg/m ³)	(µg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)	(ng/m ³)	(µg/m ³)
04-Jun-2025	<20.0	25.28	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
05-Jun-2025	<20.0	17.60	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
11-Jun-2025	<20.0	13.38	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
12-Jun-2025	<20.0	12.65	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
18-Jun-2025	<20.0	21.57	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
19-Jun-2025	<20.0	21.32	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
25-Jun-2025	<20.0	18.10	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
26-Jun-2025	<20.0	17.60	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
Standard	400 (24hours)	180 (hour)	1.0 (24hours)	6.0 (Annual)	20 (Annual)	02 (8 hours)	01(annual)	05(annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Lakhanpur

Project	LBL OCP							
Monitoring Station	Lakhanpur Police Station West of Mine							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (a) Pyrene	Benzene
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)	(mg/m^3)	(ng/m^3)	($\mu\text{g}/\text{m}^3$)
04-Jun-2025	<20.0	26.28	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
05-Jun-2025	<20.0	15.12	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
11-Jun-2025	<20.0	18.60	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
12-Jun-2025	<20.0	13.88	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
18-Jun-2025	<20.0	26.28	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
19-Jun-2025	<20.0	22.07	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
25-Jun-2025	<20.0	19.08	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
26-Jun-2025	<20.0	20.83	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
Standard	400 (24hours)	180 (hour)	1.0 (24hours)	6.0 (Annual)	20 (Annual)	02 (8 hours)	01(annual)	05(annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Lakhanpur

Project	LBL OCP							
Monitoring Station	Gumadera Village North of Mine							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (α) Pyrene	Benzene
	(μg/m ³)	(μg/m ³)	(μg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)	(ng/m ³)	(μg/m ³)
04-Jun-2025	<20.0	17.35	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
05-Jun-2025	<20.0	15.12	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
11-Jun-2025	<20.0	25.28	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
12-Jun-2025	<20.0	15.62	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
18-Jun-2025	<20.0	15.87	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
19-Jun-2025	<20.0	19.33	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
25-Jun-2025	<20.0	24.30	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
26-Jun-2025	<20.0	18.85	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
Standard	400 (24hours)	180 (hour)	1.0 (24hours)	6.0 (Annual)	20 (Annual)	02 (8 hours)	01(annual)	05(annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Lakhanpur

Project	LBL OCP							
Monitoring Station	Ramada Village South of Mine							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (a) Pyrene	Benzene
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)	(mg/m^3)	(ng/m^3)	($\mu\text{g}/\text{m}^3$)
04-Jun-2025	<20.0	26.78	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
05-Jun-2025	<20.0	24.80	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
11-Jun-2025	<20.0	22.32	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
12-Jun-2025	<20.0	23.80	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
18-Jun-2025	<20.0	14.88	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
19-Jun-2025	<20.0	23.55	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
25-Jun-2025	<20.0	24.05	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
26-Jun-2025	<20.0	21.82	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
Standard	400 (24hours)	180 (hour)	1.0 (24hours)	6.0 (Annual)	20 (Annual)	02 (8 hours)	01(annual)	05(annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Lakhanpur

Project	LBL OCP							
Monitoring Station	Barihapali Village South West of Mine							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (α) Pyrene	Benzene
	(μg/m ³)	(μg/m ³)	(μg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)	(ng/m ³)	(μg/m ³)
04-Jun-2025	<20.0	16.87	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
05-Jun-2025	<20.0	25.03	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
11-Jun-2025	<20.0	21.07	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
12-Jun-2025	<20.0	23.80	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
18-Jun-2025	<20.0	18.35	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
19-Jun-2025	<20.0	27.27	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
25-Jun-2025	<20.0	15.12	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
26-Jun-2025	<20.0	18.35	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
Standard	400 (24hours)	180 (hour)	1.0 (24hours)	6.0 (Annual)	20 (Annual)	02 (8 hours)	01(annual)	05(annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Lakhanpur

Project	LBL OCP							
Monitoring Station	Bartap Village North West of Mine							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (α) Pyrene	Benzen e
	(µg/m ³)	(µg/m ³)	(µg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)	(ng/m ³)	(µg/m ³)
05-Jun-2025	<20.0	24.05	<0.1	<1.0	<1.0	.09	BQL(QL=0.7)	BQL
06-Jun-2025	<20.0	15.37	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
11-Jun-2025	<20.0	24.80	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
12-Jun-2025	<20.0	18.85	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
18-Jun-2025	<20.0	17.85	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
19-Jun-2025	<20.0	20.33	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
25-Jun-2025	<20.0	12.90	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
26-Jun-2025	<20.0	14.63	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
Standard	400 (24hours)	180 (hour)	1.0 (24hours)	6.0 (Annual)	20 (Annual)	02 (8 hours)	01(annual)	05(annual)

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BHUBANESWAR

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 सीएमपीडीआई मिनी रत्न cmpdi Mini Ratna	AMBIENT AIR QUALITY DATA Area: Lakhanpur
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Project	LBL OCP
Monitoring Station	Kirulbal Village
Date of sampling	Carbon Monoxide (CO)
	mg/m³
07-Jun-2025	1.2
20-Jun-2025	1.4
Standard	02(8 Hours)

Project	LBL OCP
Monitoring Station	Lilari Magazine House
Date of sampling	Carbon Monoxide (CO)
	mg/m³
07-Jun-2025	1.0
20-Jun-2025	1.3
Standard	02(8 Hours)

Project	LBL OCP
Monitoring Station	BOCM Workshop
Date of sampling	Carbon Monoxide (CO)
	mg/m³
07-Jun-2025	1.5
30-Jun-2025	1.4
Standard	02(8 Hours)

Project	LBL OCP
Monitoring Station	West of Lakhanpur Quarry Near Solada
Date of sampling	Carbon Monoxide (CO)
	mg/m³
07-Jun-2025	1.4
30-Jun-2025	1.2
Standard	02(8 Hours)


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CENTRAL POLLUTION CONTROL BOARD

TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Lakhanpur

PROJECT :

LBL OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
03-Jun-25	BOCM Workshop	60.7	58.3
03-Jun-25	Gumadera Village North of Mine	53.2	41.8
03-Jun-25	Barihapali Village South West of Mine	50.9	41.2
03-Jun-25	Kirulbal Village	50.6	42.9
03-Jun-25	Lakhanpur Police Station West of Mine	52.1	41.6
03-Jun-25	Ramada Village South of Mine	51.6	40.9
03-Jun-25	Ardhapara Village South East of Mine	50.2	41.8
03-Jun-25	Bartap Village North West of Mine	49.8	40.2
03-Jun-25	Near Lilari Magazine House	59.2	51.4
03-Jun-25	Kadam Rehab Centre East of Mine	48.9	43.6
03-Jun-25	West of Lakhanpur Quarry Near Solada	59.2	47.7
24-Jun-25	Ardhapara Village South East of Mine	51.6	40.9
24-Jun-25	Kirulbal Village	50.9	43.6
24-Jun-25	Gumadera Village North of Mine	52.8	41.6
24-Jun-25	Barihapali Village South West of Mine	52.9	40.5
24-Jun-25	Near Lilari Magazine House	62.3	56.8
24-Jun-25	West of Lakhanpur Quarry Near Solada	59.6	53.4
24-Jun-25	Lakhanpur Police Station West of Mine	51.6	42.9
24-Jun-25	Ramada Village South of Mine	50.1	42.3
24-Jun-25	BOCM Workshop	60.4	54.2
24-Jun-25	Bartap Village North West of Mine	50.8	40.7
24-Jun-25	Kadam Rehab Centre East of Mine	59.3	40.3

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 :

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
12-Jun-25	Mine Sump Water, Lakhanpur	7.21	<4.0	31	24	-	-	-	
12-Jun-25	Inlet of ETP, Belpahar	7.64	<4.0	26	20	-	-	-	
12-Jun-25	Outlet of ETP, Lakhanpur	7.22	<4.0	30	28	-	-	-	
12-Jun-25	Mine Sump Water, Lilari	6.45	<4.0	18	8	-	-	-	
12-Jun-25	Outlet of ETP, Belpahar	7.20	<4.0	24	16	-	-	-	
12-Jun-25	Inlet of ETP, Lakhanpur	7.55	<4.0	32	36	-	-	-	
12-Jun-25	Mine Sump Water, Belpahar	6.74	<4.0	21	12	-	-	-	
27-Jun-25	Inlet of ETP, Lakhanpur	6.88	<4.0	36	40	-	-	-	
27-Jun-25	Outlet of ETP, Belpahar	6.43	<4.0	46	28	-	-	-	
27-Jun-25	Outlet of ETP, Lakhanpur	6.97	<4.0	26	32	-	-	-	
27-Jun-25	Inlet of ETP, Belpahar	6.42	<4.0	48	36	-	-	-	

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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TABLE--

EFFLUENT QUALITY DATA

Area :

Lakhanpurl

(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
12-Jun-25	Clear Water Tank of Sewage Treatment Plant	7.34	-	16	-	<2	-	-	46
12-Jun-25	STP Inlet	7.05	-	29		<2	-	-	110
27-Jun-25	Clear Water Tank of Sewage Treatment Plant	7.05	-	21	-	<2	-	-	58
27-Jun-25	STP Inlet	7.68	-	33		<2	-	-	110


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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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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-May-2025	14-May-2025	14-May-2025	
pH	6.73	6.42	5.58	
Total Hardness (asCaCO ₃),mg/L	520	776	1532	4.0
Total Dissolved Solids, mg/L	786	1165	2300	10
Odour	Unobjectionable	Unobjectionable	Unobjectionable	-
Colour(Hazen)	3	2	4	-
Temperature(°C)	31.6	32.1	30.1	Shall not exceed 5 °C above the receiving temperature
Nitrate Nitrogen(mg/L) (As N)	1.95	1.18	0.37	10
Ammonical Nitrogen, mg/l (As N)	0.52	0.81	8.23	50
Total Kjeldhal Nitrogen, mg/l (As N)	3.32	4.43	12.20	100
Sulphide (mg/L)	<0.1	<0.1	<0.1	2
BOD [3 days at 27°C] (mg/L)	<2	<2	<2	30
Fluoride(mg/L)	0.80	0.79	0.97	2
Copper(mg/L)	<0.03	<0.03	<0.03	3
Manganese(mg/L)	<0.04	2.1	1.52	2
Iron(mg/L)	<0.1	<0.1	<0.1	3
Zinc(mg/L)	0.07	0.49	2.03	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)	<0.02	<0.02	<0.02	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	<4	<4	5
Phenolics (mg/L)	<0.001	<0.001	<0.001	1

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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
Date of Sampling	12-Jun-2025	12-Jun-2025	12-Jun-2025	Acceptable	Permissible
Colour(Hazen)	2	3	3	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	1	3	1	5
pH	7.67	7.92	7.76	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	92	96	100	200	600
Chloride(mg/L)	10	12	10	250	1000
Sulphate(mg/L)	19.52	16.32	14.76	200	400
Nitrate(mg/L)	<0.5	<0.5	<0.5	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	96	88	84	200	600
Calcium(mg/L)	25.6	19.2	17.6	75	200
Fluoride(mg/L)	0.55	<0.3	<0.3	1	1.5
Total Dissolve Solid(mg/L)	185	180	192	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	
	Monitoring Station	LKP Project Office	IWSS Inlet-BIT	IWSS Outlet-BIT	
Date of Sampling	12-Jun-2025	12-Jun-2025	12-Jun-2025	Acceptable	Permissible
Selenium(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	14.67	15.16	14.85		
Potassium(mg/L)	2.23	1.93	2.25		
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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Piezometer Water Quality Data: Lakhanpur Area

Project / OCP	LBL OCP			Indian Drinking Standards (IS-10500):2012	
	Monitoring Station	MIP 08 (Village Kusraloi, inside th premises of prathamik vidyalaya)	MIP 09 (State Govt. Horticulture Institute)		
Date of Sampling	27-May-25	28-May-25	28-May-25	Acceptable	Permissible
Colour(Hazen)	2	1	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	1	1	2	1	5
pH	6.02	5.37	7.53	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	54.42	19.79	202.85	200	600
Chloride(mg/L)	3.91	9.79	23.48	250	1000
Sulphate(mg/L)	16.58	26.10	20.65	200	400
Nitrate(mg/L)	<0.50	<0.5	<0.5	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	31.83	31.83	147.22	200	600
Calcium(mg/L)	7.99	6.39	25.55	75	200
Fluoride(mg/L)	0.36	0.45	0.66	1	1.5
Total Dissolve Solid(mg/L)	92	87	265	500	2000
Copper(mg/L)	<0.03	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	0.12	0.23	<0.04	0.1	0.3
Iron(mg/L)	<0.1	<0.1	<0.1	0.3	No relaxation
Zinc(mg/L)	0.07	<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	0.05
Selenium (mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Boron(mg/L)	<0.2	<0.2	<0.2	0.5	1
Sodium mg/L	12.97	12.34	16.61	-	-
Potassium mg/L	0.66	1.48	0.94	-	-
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/100ml)	Not Detected	Not Detected	Not Detected	-	-

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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)	
Date of Sampling	27-Jun-25	28-Jun-25	29-Jun-25	30-Jun-25	
pH	6.57	6.84	6.90	6.61	6.5-8.5
Color (Hazen unit)	2	2	2	3	300
Dissolved Oxygen(mg/L)	6.3	6.1	6.6	6.4	4
BOD (3 days 27°C(mg/L)	<2	<2	<2	<2	3
Chlorides(mg/L)	9.73	11.68	5.84	9.73	600
Sulphate(mg/L)	76.62	78.70	33.64	84.81	400
Nitrate(mg/L)	2.97	2.99	17.25	3.16	50
Fluoride(mg/L)	0.47	0.41	0.50	0.72	1.5
Total Hardness(mg/L)	31.83	123.18	35.76	115.23	-
Total dissolved solids (mg/L)	124	166	112	188	1500
TSS(mg/L)	34	38	39	55	-
Copper(mg/L)	<0.03	<0.03	<0.03	<0.03	1.5
Iron(mg/L)	<0.1	<0.1	0.12	<0.1	50
Zinc(mg/L)	0.04	0.06	0.09	0.06	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
Total Chromium (mg/L)	<0.01	<0.01	<0.01	<0.01	-
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
Chromium(as Cr ⁶⁺)(mg/L)	<0.05	<0.05	<0.05	<0.05	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
MPN (Index/100 ml)	43	58	63	84	-
Residual Free Chlorine(mg/L)	<0.2	<0.2	<0.2	<0.2	0.2

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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 Lilari Nallah with IB River	Jurabaga Pond	Adhapada Village	
NAME OF STATIONS				
Date of sampling	1-Jul-25	2-Jul-25	0703-2025	
pH	6.80	6.90	6.80	6.5-8.5
Color (Hazen unit)	2	2	2	300
Dissolved Oxygen(mg/L)	6.7	6.5	6.3	4
BOD (3 days 27°C)(mg/L)	<2	<2	<2	3
Chlorides(mg/L)	7.79	38.94	15.58	600
Sulphate(mg/L)	54.16	15.71	5.32	400
Nitrate(mg/L)	17.42	2.15	0.55	50
Fluoride(mg/L)	0.58	0.47	0.30	1.5
Total Hardness(mg/L)	35.76	47.68	23.84	-
Total dissolved solids (mg/L)	182	141	92	1500
TSS(mg/L)	61	37	34	-
Copper(mg/L)	<0.03	<0.03	<0.03	1.5
Iron(mg/L)	0.11	<0.1	<0.1	50
Zinc(mg/L)	0.05	0.1	0.08	15
Lead(mg/L)	<0.005	<0.005	<0.005	0.1
Cadmium(mg/L)	<0.001	<0.001	<0.001	0.01
Total Chromium (mg/L)	<0.01	<0.01	<0.01	-
Arsenic(mg/L)	<0.005	<0.005	<0.005	0.2
Selenium(mg/L)	<0.005	<0.005	<0.005	0.05
Chromium(as Cr ⁶⁺)(mg/L)	<0.05	<0.05	<0.05	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
MPN (Index/100 ml)	46	130	110	-
Residual Free Chlorine(mg/L)	<0.2	<0.2	<0.2	0.2

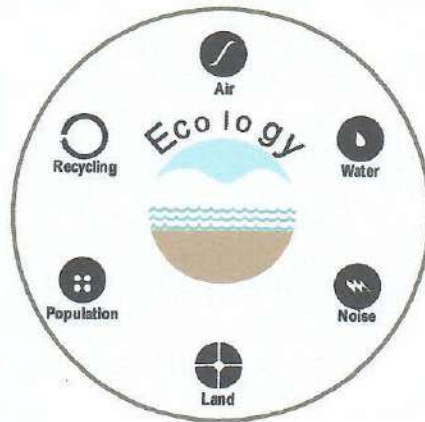
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**Environmental Monitoring Report
Of
Mahalaxmi Area
For
June-2025**

Ib Valley Coalfield



Mahanadi Coalfields Limited



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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	Dust Generating Source	Distance from DGS
13-Jun-25	North of the Sardega Railway Siding, Kulapada	173	74	32	14.63	32.16	Mining Activities, OCP, Coal Transportation	About 500m
13-Jun-25	Body Workshop Basundhara	183	87	39	17.42	22.26		
21-Jun-25	North of the Sardega Railway Siding, Kulapada	189	84	36	17.96	26.32	Mining Activities, OCP, Coal Transportation	About 500m
21-Jun-25	Body Workshop Basundhara	195	88	42	13.72	24.49		

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MoEF Standards Notification dated 25th
September, 2000

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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
02-Jun-25	Sarangijharia Village	163	63	30	19.66	18.01	Domestic	About 500m
02-Jun-25	Khamarpara Village	117	42	23	18.54	39.50		
02-Jun-25	Ratansara Village	121	45	24	9.85	21.19	Transportation	About 100m
02-Jun-25	West of Coal Stock, Near Golf Course	155	57	29	9.33	36.50	Mining Activities, OCP, Transportation	About 500m
03-Jun-25	Khamarpara Village	135	51	26	17.20	31.51		
03-Jun-25	West of Coal Stock, Near Golf Course	118	42	23	13.54	17.00	Mining Activities, OCP, Transportation	About 500m
03-Jun-25	Ratansara Village	150	55	28	14.29	23.35	Transportation	About 100m
03-Jun-25	Sarangijharia Village	142	53	27	15.42	19.32	Domestic	About 500m
09-Jun-25	Khamarpara Village	114	41	22	10.38	34.52		
09-Jun-25	West of Coal Stock, Near Golf Course	145	53	27	15.16	30.02	Mining Activities, OCP, Transportation	About 500m
09-Jun-25	Sarangijharia Village	154	57	29	13.85	31.00	Domestic	About 500m
09-Jun-25	Ratansara Village	128	48	25	9.28	20.55	Transportation	About 100m
10-Jun-25	West of Coal Stock, Near Golf Course	127	48	25	11.64	29.21	Mining Activities, OCP, Transportation	About 500m
10-Jun-25	Sarangijharia Village	133	49	26	12.65	22.34	Domestic	About 500m
10-Jun-25	Ratansara Village	117	43	23	12.59	22.29	Transportation	About 100m
10-Jun-25	Khamarpara Village	154	58	29	19.79	29.17		
16-Jun-25	Ratansara Village	132	46	24	15.28	26.52	Transportation	About 100m
16-Jun-25	Sarangijharia Village	147	48	26	13.45	26.82	Domestic	About 500m
16-Jun-25	Khamarpara Village	125	36	20	13.99	24.36		
16-Jun-25	West of Coal Stock, Near Golf Course	128	45	22	15.20	21.08	Mining Activities, OCP, Transportation	About 500m
17-Jun-25	Ratansara Village	110	34	19	15.53	34.32	Transportation	About 100m
17-Jun-25	Sarangijharia Village	155	53	29	15.97	19.50	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-Jun-25	Khamarpara Village	146	48	27	13.89	22.94		
17-Jun-25	West of Coal Stock, Near Golf Course	138	53	27	16.08	24.68	Mining Activities, OCP, Transportation	About 500m
23-Jun-25	Khamarpara Village	136	40	24	12.37	22.99		
23-Jun-25	Sarangijharia Village	127	34	20	12.11	18.15	Domestic	About 500m
23-Jun-25	West of Coal Stock, Near Golf Course	115	42	20	12.74	28.02	Mining Activities, OCP, Transportation	About 500m
23-Jun-25	Ratansara Village	143	50	26	13.32	20.44	Transportation	About 100m
24-Jun-25	Khamarpara Village	171	65	30	11.32	21.14		
24-Jun-25	Ratansara Village	154	54	29	14.57	18.75	Transportation	About 100m
24-Jun-25	Sarangijharia Village	111	45	24	13.17	20.68	Domestic	About 500m
24-Jun-25	West of Coal Stock, Near Golf Course	133	48	25	13.69	17.82	Mining Activities, OCP, Transportation	About 500m
27-Jun-25	Ratansara Village	133	47	24	17.02	24.62	Transportation	About 100m
27-Jun-25	Sarangijharia Village	136	41	23	12.37	20.72	Domestic	About 500m
27-Jun-25	West of Coal Stock, Near Golf Course	106	37	17	14.20	26.66	Mining Activities, OCP, Transportation	About 500m
27-Jun-25	Khamarpara Village	115	36	19	12.10	28.78		
28-Jun-25	West of Coal Stock, Near Golf Course	126	45	23	11.89	27.90	Mining Activities, OCP, Transportation	About 500m
28-Jun-25	Khamarpara Village	107	44	26	12.47	19.19		
28-Jun-25	Ratansara Village	122	38	20	12.53	29.83	Transportation	About 100m
28-Jun-25	Sarangijharia Village	112	35	17	15.40	27.38	Domestic	About 500m

*NAAQS, 2009

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Mahalaxmi

Project	Basundhara (W) OCP							
Monitoring Station	Sarangijharia Village							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (α) Pyrene	Benzene
	(μg/m ³)	(μg/m ³)	(μg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)	(ng/m ³)	(μg/m ³)
02-Jun-2025	<20.0	15.62	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
03-Jun-2025	<20.0	16.12	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
09-Jun-2025	<20.0	24.80	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
10-Jun-2025	<20.0	13.63	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
16-Jun-2025	<20.0	20.83	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
17-Jun-2025	<20.0	17.60	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
23-Jun-2025	<20.0	21.07	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
24-Jun-2025	<20.0	19.83	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
27-Jun-2025	<20.0	17.10	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
28-Jun-2025	<20.0	15.87	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
Standard	400 (24hours)	180 (hour)	1.0 (24hours)	6.0 (Annual)	20 (Annual)	02 (8 hours)	01(annual)	05(annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Mahalaxmi

Project	Basundhara (W) OCP							
Monitoring Station	Ratansara Village							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (α) Pyrene	Benzene
	(µg/m ³)	(µg/m ³)	(µg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)	(ng/m ³)	(µg/m ³)
02-Jun-2025	<20.0	12.65	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
03-Jun-2025	<20.0	19.33	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
09-Jun-2025	<20.0	24.30	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
10-Jun-2025	<20.0	17.35	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
16-Jun-2025	<20.0	16.12	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
17-Jun-2025	<20.0	25.53	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
23-Jun-2025	<20.0	17.35	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
24-Jun-2025	<20.0	17.85	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
27-Jun-2025	<20.0	26.53	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
28-Jun-2025	<20.0	26.78	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
Standard	400 (24hours)	180 (hour)	1.0 (24hours)	6.0 (Annual)	20 (Annual)	02 (8 hours)	01(annual)	05(annual)

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TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Mahalaxmi

PROJECT :

Basundhara (W) OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
04-Jun-25	South-West of Working Face -Gopalpur Village,Near CMPDIL Camp	62.7	56.2
04-Jun-25	North of the Sardega Railway Siding ,Kulapada	59.1	47.3
04-Jun-25	West of Coal Stock , Near Golf Course	61.4	58.7
04-Jun-25	Ratansara Village	50.9	41.7
04-Jun-25	Sarangijharia Community Centre	52.1	41.9
25-Jun-25	South-West of Working Face -Gopalpur Village,Near CMPDIL Camp	59.3	52.7
25-Jun-25	West of Coal Stock , Near Golf Course	58.3	53.6
25-Jun-25	Sarangijharia Community Centre	51.8	40.6
25-Jun-25	North of the Sardega Railway Siding ,Kulapada	60.7	52.4
25-Jun-25	Ratansara Village	50.1	42.7

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)

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TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Mahalaxmi


PROJECT :

Basundhara (E) OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
04-Jun-25	Quary Sump of Basundhara East OCP/ Near CHP of Basundhara East OCP	60.7	54.2
25-Jun-25	Quary Sump of Basundhara East OCP/ Near CHP of Basundhara East OCP	64.4	60.8

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)

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Project	Basundhara OCP
Monitoring Station	North of the Sardega Railway Siding, Kulapada
Date of sampling	Carbon Monoxide (CO)
	mg/m ³
13-Jun-2025	1.2
21-Jun-2025	1.3
Standard	02(8Hours)

Project	BasundharaOCP
Monitoring Station	Body Workshp Basundhara
Date of sampling	Carbon Monoxide (CO)
	mg/m ³
13-Jun-2025	1.4
21-Jun-2025	1.2
Standard	02(8Hours)

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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-Jun-25	Inlet to ETP at Excavation Workshop, B(W)OCP	-	-	-	-	-	-	-	Dry
13-Jun-25	Outlet of ETP at Excavation Workshop, B(W)OCP	-	-	-	-	-	-	-	Dry
13-Jun-25	Sardega Railway Siding Sedimentation Pond	7.25	<4.0	63	84	-	-	-	
13-Jun-25	Basundhara (W) OCP Mine Sump	8.29	<4.0	33	20	-	-	-	
28-Jun-25	Inlet to ETP at Excavation Workshop, B(W)OCP	-	-	-	-	-	-	-	Dry
28-Jun-25	Outlet of ETP at Excavation Workshop, B(W)OCP	-	-	-	-	-	-	-	Dry

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MoEF Standard for discharge of effluents from 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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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	15-May-2025	15-May-2025	
pH	7.69	7.21	
Total Hardness (asCaCO ₃),mg/L	280	332	4.0
Total Dissolved Solids, mg/L	420	498	10
Odour	Unobjectionable	Unobjectionable	-
Colour(Hazen)	2	3	-
Temperature(^o C)	31.5	32.1	Shall not exceed 5 ^o C above the receiving temperature
Nitrate Nitrogen(mg/L)(As N)	<0.5	1.60	10
Ammonical Nitrogen , mg/l (As N)	0.64	0.52	50
Total Kjeldhal Nitrogen, mg/l (As N)	3.32	3.32	100
Sulphide (mg/L)	<0.1	<0.1	2
BOD [3 days at 27 ^o C] (mg/L)	<2	<2	30
Fluoride(mg/L)	0.03	0.75	2
Copper(mg/L)	<0.03	<0.03	3
Manganese(mg/L)	<0.04	<0.04	2
Iron(mg/L)	<0.1	<0.1	3
Zinc(mg/L)	0.04	<0.04	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)	<0.02	<0.02	3
Arsenic, mg/l	<0.005	<0.005	0.2
Selenium (mg/L)	<0.005	<0.005	0.05
Disolved Phosphate(mg/L)	<4	<4	5
Phenolics (mg/L)	<0.001	<0.001	1


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Drinking Water Quality Data Mahalaxmi Area

Project / OCP	Basundhara (W)		Indian Drinking Standards (IS-10500):2012	
	Water Treatment Plant Clear Water Reservoir	Basundhar East Sump Quarry OCP		
Monitoring Station				
Date of Sampling	13-Jun-2025	13-Jun-2025	Acceptable	Permissible
Colour(Hazen)	2	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	3	2	1	5
pH	7.37	8.88	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	60	80	200	600
Chloride(mg/L)	40	56	250	1000
Sulphate(mg/L)	75.12	88.76	200	400
Nitrate(mg/L)	<0.5	<0.5	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	232	236	200	600
Calcium(mg/L)	46.4	48	75	200
Fluoride(mg/L)	<0.3	<0.3	1	1.5
Total Dissolve Solid(mg/L)	400	405	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

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Drinking Water Quality Data Mahalaxmi Area

Project / OCP	Basundhara (W)		Indian Drinking Standards (IS-10500):2012	
	Water Treatment Plant Clear Water Reservoir	Basundhar East Sump Quarry OCP		
Monitoring Station				
Date of Sampling	13-Jun-2025	13-Jun-2025	Acceptable	Permissible
Selenium(mg/L)	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	16.16	17.34		
Potassium(mg/L)	3.71	5.42		
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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Piezometer Water Quality Data: Mahalaxmi Area

Project / OCP	Basundhara (W)			Indian Drinking Standards (IS-10500):2012	
	Monitoring Station	MIP 13 (Tumulia Village, Inside campus of Manikeswari)	MIP 15 (Back side of Sardega Primary School)	MIP 17 (Gopalpur, CMPDI Expl Camp)	Acceptable
Date of Sampling	28-May-25	28-May-25	28-May-25	5	15
Colour(Hazen)	3	3	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	2	2	1	5
pH	6.90	7.61	6.77	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	296.85	316.64	192.95	200	600
Chloride(mg/L)	88.07	64.58	39.14	250	1000
Sulphate(mg/L)	59.22	36.75	32.12	200	400
Nitrate(mg/L)	0.65	12.61	<0.50	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	290.45	290.45	198.94	200	600
Calcium(mg/L)	81.45	78.25	43.12	75	200
Fluoride(mg/L)	0.49	0.47	0.59	1	1.5
Total Dissolve Solid(mg/L)	523	495	334	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	0.3	No relaxation
Zinc(mg/L)	<0.04	<0.04	0.22	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	0.05
Selenium (mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Boron(mg/L)	<0.2	<0.2	<0.2	0.5	1
Sodium mg/L	20.07	22.98	7.20	-	-
Potassium mg/L	2.61	4.88	4.13	-	-
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/100ml)	Not Detected	Not Detected	Not Detected	-	-

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Surface Water Quality Data Mahalaxmi Area

Project/OCF	Basundhara (W)	IS:2296-1982 Tolerance for inland Surface water (Class C)
NAME OF STATIONS	Chaturdhara River Down Stream	
Date of sampling	28-Jun-25	
pH	6.52	6.5-8.5
Color (Hazen unit)	2	300
Dissolved Oxygen(mg/L)	6.2	4
BOD (3 days 27°C)(mg/L)	<2	3
Chlorides(mg/L)	5.84	600
Sulphate(mg/L)	18.31	400
Nitrate(mg/L)	2.52	50
Fluoride(mg/L)	0.69	1.5
Total Hardness(mg/L)	23.84	-
Total dissolved solids (mg/L)	86	1500
TSS(mg/L)	58	-
Copper(mg/L)	<0.03	1.5
Iron(mg/L)	<0.1	50
Zinc(mg/L)	0.090	15
Lead(mg/L)	<0.005	0.1
Cadmium(mg/L)	<0.001	0.01
Total Chromium (mg/L)	<0.01	-
Arsenic(mg/L)	<0.005	0.2
Selenium(mg/L)	<0.005	0.05
Chromium(as Cr ⁶⁺)(mg/L)	<0.05	0.05
Phenolics(mg/L)	<0.001	0.005
Oil & Grease (mg/L)	<4.0	0.1
MPN (Index/100 ml)	46	-
Residual Free Chlorine(mg/L)	<0.2	0.2

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**Environmental Monitoring Report
Of
Basundhara Area
For
June-2025**

Ib Valley Coalfield



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 :

Kulda OCP

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

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source	Distance from DGS
13-Jun-25	Laikera Railway Siding	186	87	39	12.99	23.75		
13-Jun-25	Kulda PO Office	179	78	36	11.69	22.25		
21-Jun-25	Laikera Railway Siding	173	85	38	12.54	28.12		
21-Jun-25	Kulda PO Office	166	78	35	17.47	22.72		

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MoEF Standards Notification dated 25th
September, 2000

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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	Dust Generating Source	Distance from DGS
13-Jun-25	Karlikachar Village	173	75	34	11.18	27.58	External Coal Transportation Road	About 500m
13-Jun-25	KAN-1 Near Coal Sampling Lab	185	84	38	11.2	33.90	Railway Siding, Transportation	About 500m
13-Jun-25	Garjanbahal Village	178	74	35	13.97	20.20	External Coal Transportation Road	About 500m
21-Jun-25	Karlikachar Village	193	87	40	13.60	21.02	External Coal Transportation Road	About 500m
21-Jun-25	KAN-1 Near Coal Sampling Lab	205	96	43	15.12	18.95	Railway Siding, Transportation	About 500m
21-Jun-25	Garjanbahal Village	195	94	39	15.56	20.67	External Coal Transportation Road	About 500m

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MoEF Standards Notification dated 25th September, 2000	500	250		120	120
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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
02-Jun-25	North of CHP, Teleimal	142	53	27	11.09	20.55	Domestic, OCP, Transportation	About 500m
02-Jun-25	Bilaimunda Village	141	53	27	12.95	36.02	Village Road	About 500m
02-Jun-25	External CT Road, Barpali	151	56	29	11.15	16.21	Mining Activities, Coal Transportation	About 500m
02-Jun-25	South West of Working Face, Chakarpur	132	48	25	9.72	23.01	Village Road	About 500m
03-Jun-25	Bilaimunda Village	124	42	23	14.63	21.28	Village Road	About 500m
03-Jun-25	South West of Working Face, Chakarpur	157	60	29	19.86	32.25	Village Road	About 500m
03-Jun-25	External CT Road, Barpali	128	49	26	19.27	30.60	Mining Activities, Coal Transportation	About 500m
03-Jun-25	North of CHP, Teleimal	114	38	21	11.99	18.05	Domestic, OCP, Transportation	About 500m
09-Jun-25	Bilaimunda Village	135	51	26	10.00	17.61	Village Road	About 500m
09-Jun-25	South West of Working Face, Chakarpur	150	55	28	8.98	23.19	Village Road	About 500m
09-Jun-25	North of CHP, Teleimal	118	45	23	18.61	34.96	Domestic, OCP, Transportation	About 500m
09-Jun-25	External CT Road, Barpali	115	45	24	16.64	33.32	Mining Activities, Coal Transportation	About 500m
10-Jun-25	South West of Working Face, Chakarpur	120	45	24	19.90	34.87	Village Road	About 500m
10-Jun-25	North of CHP, Teleimal	131	48	25	20.32	20.59	Domestic, OCP, Transportation	About 500m
10-Jun-25	External CT Road, Barpali	110	38	21	21.13	24.71	Mining Activities, Coal Transportation	About 500m
10-Jun-25	Bilaimunda Village	121	45	24	13.35	25.95	Village Road	About 500m
16-Jun-25	External CT Road, Barpali	144	53	28	11.74	22.21	Mining Activities, Coal Transportation	About 500m
16-Jun-25	North of CHP, Teleimal	108	53	26	14.74	24.69	Domestic, OCP, Transportation	About 500m
16-Jun-25	Bilaimunda Village	165	56	30	12.28	25.90	Village Road	About 500m
16-Jun-25	South West of Working Face, Chakarpur	169	58	30	11.72	21.47	Village Road	About 500m
17-Jun-25	External CT Road, Barpali	134	43	26	11.41	22.92	Mining Activities, Coal Transportation	About 500m
17-Jun-25	North of CHP, Teleimal	125	43	22	14.28	20.93	Domestic, OCP, Transportation	About 500m

*NAAQS,2009		100	60	80	80
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Project :**Kulda 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-Jun-25	Bilaimunda Village	127	49	25	12.80	30.04	Village Road	About 500m
17-Jun-25	South West of Working Face, Chakarpur	132	45	24	13.74	22.38	Village Road	About 500m
23-Jun-25	Bilaimunda Village	155	64	31	13.65	26.29	Village Road	About 500m
23-Jun-25	North of CHP, Teleimal	132	47	24	16.29	29.10	Domestic, OCP, Transportation	About 500m
23-Jun-25	South West of Working Face, Chakarpur	128	42	22	13.09	31.71	Village Road	About 500m
23-Jun-25	External CT Road, Barpali	153	59	29	16.04	22.21	Mining Activities, Coal Transportation	About 500m
24-Jun-25	Bilaimunda Village	140	53	28	15.71	22.39	Village Road	About 500m
24-Jun-25	External CT Road, Barpali	132	42	23	13.50	27.13	Mining Activities, Coal Transportation	About 500m
24-Jun-25	North of CHP, Teleimal	148	64	29	13.78	22.10	Domestic, OCP, Transportation	About 500m
24-Jun-25	South West of Working Face, Chakarpur	143	51	27	13.45	17.32	Village Road	About 500m
27-Jun-25	External CT Road, Barpali	107	34	18	14.50	23.77	Mining Activities, Coal Transportation	About 500m
27-Jun-25	North of CHP, Teleimal	117	49	23	16.85	30.87	Domestic, OCP, Transportation	About 500m
27-Jun-25	South West of Working Face, Chakarpur	149	53	28	17.36	32.62	Village Road	About 500m
27-Jun-25	Bilaimunda Village	131	47	24	11.42	21.55	Village Road	About 500m
28-Jun-25	South West of Working Face, Chakarpur	115	45	23	15.76	23.92	Village Road	About 500m
28-Jun-25	Bilaimunda Village	105	33	17	16.76	21.58	Village Road	About 500m
28-Jun-25	External CT Road, Barpali	133	40	22	10.77	21.04	Mining Activities, Coal Transportation	About 500m
28-Jun-25	North of CHP, Teleimal	138	44	25	12.68	18.59	Domestic, OCP, Transportation	About 500m

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*NAAQS,2009

100	60	80	80
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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
02-Jun-25	West of working face, Bihaimunda	137	49	26	16.63	30.47	South-West of Working Face	About 500m
02-Jun-25	South-East of Wokring Face, Kutabaga Village	138	52	27	10.28	37.65	South-East of Working Face	About 1000m
03-Jun-25	South-East of Wokring Face, Kutabaga Village	117	42	23	17.49	26.57	South-East of Working Face	About 1000m
03-Jun-25	West of working face, Bihaimunda	121	45	23	14.56	31.39	South-West of Working Face	About 500m
09-Jun-25	South-East of Wokring Face, Kutabaga Village	144	51	26	10.46	30.51	South-East of Working Face	About 1000m
09-Jun-25	West of working face, Bihaimunda	115	39	20	8.46	28.89	South-West of Working Face	About 500m
10-Jun-25	South-East of Wokring Face, Kutabaga Village	115	40	22	19.25	39.19	South-East of Working Face	About 1000m
10-Jun-25	West of working face, Bihaimunda	126	47	24	10.39	31.44	South-West of Working Face	About 500m
16-Jun-25	South-East of Wokring Face, Kutabaga Village	134	49	26	12.74	26.36	South-East of Working Face	About 1000m
16-Jun-25	West of working face, Bihaimunda	167	59	32	11.98	19.76	South-West of Working Face	About 500m
17-Jun-25	South-East of Wokring Face, Kutabaga Village	120	34	18	13.67	21.82	South-East of Working Face	About 1000m
17-Jun-25	West of working face, Bihaimunda	145	46	27	15.52	20.42	South-West of Working Face	About 500m
23-Jun-25	West of working face, Bihaimunda	131	43	24	15.39	26.66	South-West of Working Face	About 500m
23-Jun-25	South-East of Wokring Face, Kutabaga Village	131	44	23	13.70	29.41	South-East of Working Face	About 1000m
24-Jun-25	South-East of Wokring Face, Kutabaga Village	147	49	27	15.33	29.61	South-East of Working Face	About 1000m
24-Jun-25	West of working face, Bihaimunda	154	54	28	17.95	26.13	South-West of Working Face	About 500m
27-Jun-25	South-East of Wokring Face, Kutabaga Village	124	39	21	12.53	25.24	South-East of Working Face	About 1000m
27-Jun-25	West of working face, Bihaimunda	130	40	23	16.56	25.03	South-West of Working Face	About 500m
28-Jun-25	West of working face, Bihaimunda	125	45	25	14.35	25.35	South-West of Working Face	About 500m
28-Jun-25	South-East of Wokring Face, Kutabaga Village	134	47	24	12.33	19.27	South-East of Working Face	About 1000m

*NAAQS, 2009

100	60	80	80
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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Basundhara

Project	Kulda OCP							
Monitoring Station	Bilaimunda Village							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (α) Pyrene	Benzene
	(µg/m ³)	(µg/m ³)	(µg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)	(ng/m ³)	(µg/m ³)
02-Jun-2025	<20.0	15.87	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
03-Jun-2025	<20.0	24.80	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
09-Jun-2025	<20.0	20.08	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
10-Jun-2025	<20.0	27.27	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
16-Jun-2025	<20.0	14.13	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
17-Jun-2025	<20.0	24.05	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
23-Jun-2025	<20.0	19.58	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
24-Jun-2025	<20.0	14.38	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
27-Jun-2025	<20.0	15.12	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
28-Jun-2025	<20.0	24.80	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
Standard	400 (24hours)	180 (hour)	1.0 (24hours)	6.0 (Annual)	20(Annual)	02 (8 hours)	01(annual)	05(annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Basundhara

Project	Kulda OCP							
Monitoring Station	South West of Working Face, Chakarpur							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (α) Pyrene	Benzene
	(μg/m ³)	(μg/m ³)	(μg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)	(ng/m ³)	(μg/m ³)
02-Jun-2025	<20.0	26.28	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
03-Jun-2025	<20.0	15.87	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
09-Jun-2025	<20.0	13.38	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
10-Jun-2025	<20.0	14.63	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
16-Jun-2025	<20.0	20.83	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
17-Jun-2025	<20.0	25.03	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
23-Jun-2025	<20.0	15.12	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
24-Jun-2025	<20.0	13.13	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
27-Jun-2025	<20.0	15.12	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
28-Jun-2025	<20.0	26.78	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
Standard	400 (24hours)	180 (hour)	1.0 (24hours)	6.0 (Annual)	20 (Annual)	02 (8 hours)	01(annual)	05(annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Basundhara

Project	Kulda OCP							
Monitoring Station	North of CHP, Teleimal							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (α) Pyrene	Benzene
	(μg/m ³)	(μg/m ³)	(μg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)	(ng/m ³)	(μg/m ³)
02-Jun-2025	<20.0	19.08	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
03-Jun-2025	<20.0	18.85	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
09-Jun-2025	<20.0	19.33	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
10-Jun-2025	<20.0	22.82	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
16-Jun-2025	<20.0	16.62	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
17-Jun-2025	<20.0	16.37	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
23-Jun-2025	<20.0	21.07	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
24-Jun-2025	<20.0	13.38	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
27-Jun-2025	<20.0	17.85	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
28-Jun-2025	<20.0	24.30	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
Standard	400 (24hours)	180 (hour)	1.0 (24hours)	6.0 (Annual)	20 (Annual)	02 (8 hours)	01(annual)	05(annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Basundhara

Project	Kulda OCP							
Monitoring Station	External CT Road, Barpali							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (α) Pyrene	Benzene
	(µg/m ³)	(µg/m ³)	(µg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)	(ng/m ³)	(µg/m ³)
02-Jun-2025	<20.0	19.33	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
03-Jun-2025	<20.0	18.85	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
09-Jun-2025	<20.0	13.38	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
10-Jun-2025	<20.0	12.65	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
16-Jun-2025	<20.0	25.28	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
17-Jun-2025	<20.0	17.10	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
23-Jun-2025	<20.0	12.90	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
24-Jun-2025	<20.0	24.80	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
27-Jun-2025	<20.0	19.83	<0.1	<1.0	<1.0	1.4	BQL(QL=0.7)	BQL
28-Jun-2025	<20.0	14.38	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
Standard	400 (24hours)	180 (hour)	1.0 (24hours)	6.0 (Annual)	20(Annual)	02 (8 hours)	01(annual)	05(annual)

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Project	Garjanbahal OCP
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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Basundhara

Project	Garjanbahal OCP							
Monitoring Station	South-East of Working Face, Kutabaga							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (α) Pyrene	Benzene
	(μg/m ³)	(μg/m ³)	(μg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)	(ng/m ³)	(μg/m ³)
02-Jun-2025	<20.0	21.32	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
03-Jun-2025	<20.0	20.58	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
09-Jun-2025	<20.0	17.35	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
10-Jun-2025	<20.0	14.13	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
16-Jun-2025	<20.0	15.12	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
17-Jun-2025	<20.0	27.02	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
23-Jun-2025	<20.0	26.03	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
24-Jun-2025	<20.0	24.55	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
27-Jun-2025	<20.0	17.35	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
28-Jun-2025	<20.0	14.88	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
Standard	400(24hours)	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)	02 (8 hours)	01(annual)	05(annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Basundhara

Project	Garjanbahal OCP							
Monitoring Station	Bihaimunda Village							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (α) Pyrene	Benzene
	(μg/m ³)	(μg/m ³)	(μg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)	(ng/m ³)	(μg/m ³)
02-Jun-2025	<20.0	12.65	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
03-Jun-2025	<20.0	21.82	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
09-Jun-2025	<20.0	20.33	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
10-Jun-2025	<20.0	18.85	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
16-Jun-2025	<20.0	19.08	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
17-Jun-2025	<20.0	25.28	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
23-Jun-2025	<20.0	15.37	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
24-Jun-2025	<20.0	24.80	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
27-Jun-2025	<20.0	12.65	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
28-Jun-2025	<20.0	16.52	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
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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TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Basundhara

PROJECT :

Kulda OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
04-Jun-25	Laikera Railway Siding	62.8	59.3
04-Jun-25	Kulda PO Office	61.4	56.9
04-Jun-25	South West of Working Face Chakarpur	60.2	53.7
25-Jun-25	Laikera Railway Siding	60.2	58.6
25-Jun-25	Kulda PO Office	66.6	62.3
25-Jun-25	South West of Working Face Chakarpur	54.6	44.9

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--

NOISE LEVEL MONITORING DATA

AREA :

Basundhara

PROJECT :

Garjhanbahal OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
04-Jun-25	Garjhanbahal Village	51.1	41.9
04-Jun-25	Karlikachar Village	50.9	43.3
25-Jun-25	Garjhanbahal Village	51.3	44.1
25-Jun-25	Karlikachar Village	50.5	42.8

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)

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 LABORATORY

TABLE--

EFFLUENT QUALITY DATA

Area :

Basandhara

(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-Jun-25	Mine Sump Water Near Kulda Nursery	8.23	<4.0	14	8	-	-	-	
13-Jun-25	Final Outlet Of ETP	7.91	<4.0	26	52	-	-	-	
13-Jun-25	Inlet of ETP	7.71	<4.0	75	108	-	-	-	
28-Jun-25	Final Outlet Of ETP	6.57	<4.0	33	48	-	-	-	
28-Jun-25	Inlet of ETP	6.51	<4.0	45	72	-	-	-	

5/11
 Authorized Signatory
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 BHUBANESWAR

1/11/25

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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सिद्धान्तपीडीआई
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MUMBAI

TABLE--

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-Jun-25	Inlet of Settling Tank (Kanika Siding)	7.41	<4.0	36	44	-	-	-	
13-Jun-25	Mine Sump Water	7.65	<4.0	59	62	-	-	-	
13-Jun-25	Outlet of Settling Tank (Kanika Siding)	6.80	<4.0	26	40	-	-	-	
28-Jun-25	Mine Sump Water	7.92	<4.0	52	48	-	-	-	
28-Jun-25	Inlet of Settling Tank (Kanika Siding)	7.38	<4.0	37	40	-	-	-	
28-Jun-25	Outlet of Settling Tank (Kanika Siding)	7.19	<4.0	28	32	-	-	-	

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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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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	15-May-2025	15-May-2025	15-May-2025	
pH	7.36	7.96	8.21	
Total Hardness (asCaCO ₃),mg/L	364	4.12	268	4.0
Total Dissolved Solids, mg/L	540	600	390	10
Odour	Unobjectionable	Unobjectionable	Unobjectionable	-
Colour(Hazen)	2	4	3	-
Temperature(°C)	32.6	30.5	30.2	Shall not exceed 5 °C above the receiving temperature
Nitrate Nitrogen(mg/L)(As N)	0.6	6.32	4.54	10
Ammonical Nitrogen , mg/l (As N)	0.46	0.46	0.56	50
Total Kjeldhal Nitrogen, mg/l (As N)	3.32	2.21	2.21	100
Sulphide (mg/L)	<0.1	<0.1	<0.1	2
BOD [3 days at 27°C] (mg/L)	<2	<2	<2	30
Fluoride(mg/L)	1.48	1.45	143	2
Copper(mg/L)	<0.03	<0.03	<0.03	3
Manganese(mg/L)	<0.04	0.11	0.3	2
Iron(mg/L)	<0.1	<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)	<0.02	<0.02	<0.02	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	<4	<4	5
Phenolics (mg/L)	<0.001	<0.001	<0.001	1

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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	15-May-2025	15-May-2025	15-May-2025	
pH	6.82	7.03	7.98	
Total Hardness (asCaCO ₃),mg/L	40	40	244	4.0
Total Dissolved Solids, mg/L	87	60	350	10
Odour	Unobjectionable	Unobjectionable	Unobjectionable	-
Colour(Hazen)	1	1	2	-
Temperature(°C)	30.2	29.8	30.4	Shall not exceed 5 °C above the receiving temperature
Nitrate Nitrogen(mg/L)(As N)	<0.5	<0.5	3.31	10
Ammonical Nitrogen , mg/l (As N)	0.60	0.48	0.61	50
Total Kjeldhal Nitrogen, mg/l (As N)	2.21	3.32	3.32	100
Sulphide (mg/L)	<0.1	<0.1	<0.1	2
BOD [3 days at 27°C] (mg/L)	<2	<2	<2	30
Fluoride(mg/L)	<0.3	<0.3	1.47	2
Copper(mg/L)	<0.03	<0.03	<0.03	3
Manganese(mg/L)	0.27	<0.04	0.06	2
Iron(mg/L)	<0.1	<0.1	<0.1	3
Zinc(mg/L)	<0.04	1.25	<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)	<0.02	<0.02	<0.02	3
Arsenic, mg/l	<0.005	<0.005	<0.005	0.2
Selenium (mg/L)	<0.005	<0.005	<0.005	0.05
Disolved Phosphate(mg/L)	<4	<4	<4	5
Phenolics (mg/L)	<0.001	<0.001	<0.001	1

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Piezometer Water Quality Data: Basundhara Area

Project / OCP	Kulda		Indian Drinking Standards (IS-10500):2012	
	Monitoring Station	MIP 11 (Karlikachar, Infront of Primary School)	MIP 12 (Balinga Village, Infront of Office)	Acceptable
Date of Sampling	29-May-25	29-May-25	Acceptable	Permissible
Colour(Hazen)	2	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	1	1	1	5
pH	6.56	7.21	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	153.37	94.00	200	600
Chloride(mg/L)	11.74	37.18	250	1000
Sulphate(mg/L)	18.96	17.53	200	400
Nitrate(mg/L)	<0.5	0.57	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	123.34	79.58	200	600
Calcium(mg/L)	19.16	14.37	75	200
Fluoride(mg/L)	0.67	0.62	1	1.5
Total Dissolve Solid(mg/L)	193	177	500	2000
Copper(mg/L)	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	0.12	<0.04	0.1	0.3
Iron(mg/L)	<0.1	<0.1	0.3	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	0.05
Selenium (mg/L)	<0.005	<0.005	0.01	No relaxation
Boron(mg/L)	<0.2	<0.2	0.5	1
Sodium mg/L	5.79	12.23	-	-
Potassium mg/L	0.72	4.34	-	-
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/100ml)	Not Detected	Not Detected	-	-

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Surface Water Quality Data Basundhara Area

Project/OCP	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	12-Jun-25	30-Jun-25	
pH	6.92	6.85	6.5-8.5
Color (Hazen unit)	2	3	300
Dissolved Oxygen(mg/L)	6.7	6.1	4
BOD (3 days 27°C)(mg/L)	<2	<2	3
Chlorides(mg/L)	77.88	85.66	600
Sulphate(mg/L)	19.22	31.56	400
Nitrate(mg/L)	1.62	4.10	50
Fluoride(mg/L)	0.51	0.55	1.5
Total Hardness(mg/L)	75.50	115.23	-
Total dissolved solids (mg/L)	300	387	1500
TSS(mg/L)	68	76	-
Copper(mg/L)	<0.03	<0.03	1.5
Iron(mg/L)	<0.1	<0.1	50
Zinc(mg/L)	0.09	0.09	15
Lead(mg/L)	<0.005	<0.005	0.1
Cadmium(mg/L)	<0.001	<0.001	0.01
Total Chromium (mg/L)	<0.01	<0.01	-
Arsenic(mg/L)	<0.005	<0.005	0.2
Selenium(mg/L)	<0.005	<0.005	0.05
Chromium(as Cr ⁶)(mg/L)	<0.05	<0.05	0.05
Phenolics(mg/L)	<0.001	<0.001	0.005
Oil & Grease (mg/L)	<4.0	<4.0	0.1
MPN (Index/100 ml)	39	47	-
Residual Free Chlorine(mg/L)	<0.2	<0.2	0.2

F. Jaitwal
Authorised Signatory
CMPDI, D.I. VII, LAB
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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	1-Jul-25	2-Jul-25	3-Jul-25	
pH	6.26	6.94	5.86	6.5-8.5
Color (Hazen unit)	2	2	2	300
Dissolved Oxygen(mg/L)	6.8	6.4	6.5	4
BOD (3 days 27°C)(mg/L)	<2	<2	<2	3
Chlorides(mg/L)	9.73	11.68	9.73	600
Sulphate(mg/L)	12.34	19.48	25.19	400
Nitrate(mg/L)	4.61	5.06	5.21	50
Fluoride(mg/L)	0.48	0.65	0.31	1.5
Total Hardness(mg/L)	27.82	35.76	27.82	-
Total dissolved solids (mg/L)	84	102	88	1500
TSS(mg/L)	61	69	31	-
Copper(mg/L)	<0.03	<0.03	<0.03	1.5
Iron(mg/L)	<0.1	<0.1	<0.1	50
Zinc(mg/L)	0.11	0.14	0.25	15
Lead(mg/L)	<0.005	<0.005	<0.005	0.1
Cadmium(mg/L)	<0.001	<0.001	<0.001	0.01
Total Chromium (mg/L)	<0.01	<0.01	<0.01	-
Arsenic(mg/L)	<0.005	<0.005	<0.005	0.2
Selenium(mg/L)	<0.005	<0.005	<0.005	0.05
Chromium(as Cr ⁶⁺)(mg/L)	<0.05	<0.05	<0.05	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
MPN (Index/100 ml)	58	63	130	-
Residual Free Chlorine(mg/L)	<0.2	<0.2	<0.2	0.2

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BHUBANESWAR



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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	6-Jan-00	12-Jun-25	30-Jun-25	
pH	6.84	6.92	6.85	6.5-8.5
Color (Hazen unit)	2	2	3	300
Dissolved Oxygen(mg/L)	6.2	6.7	6.1	4
BOD (3 days 27°C(mg/L)	<2	<2	<2	3
Chlorides(mg/L)	5.84	77.88	85.66	600
Sulphate(mg/L)	31.30	19.22	31.56	400
Nitrate(mg/L)	1.60	1.62	4.10	50
Fluoride(mg/L)	0.41	0.51	0.55	1.5
Total Hardness(mg/L)	83.45	75.50	115.23	-
Total dissolved solids (mg/L)	108	300	387	1500
TSS(mg/L)	29	68	76	-
Copper(mg/L)	<0.03	<0.03	<0.03	1.5
Iron(mg/L)	<0.1	<0.1	<0.1	50
Zinc(mg/L)	0.06	0.09	0.09	15
Lead(mg/L)	<0.005	<0.005	<0.005	0.1
Cadmium(mg/L)	<0.001	<0.001	<0.001	0.01
Total Chromium (mg/L)	<0.01	<0.01	<0.01	-
Arsenic(mg/L)	<0.005	<0.005	<0.005	0.2
Selenium(mg/L)	<0.005	<0.005	<0.005	0.05
Chromium(as Cr ⁶⁺)(mg/L)	<0.05	<0.05	<0.05	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
MPN (Index/100 ml)	70	39	47	-
Residual Free Chlorine(mg/L)	<0.2	<0.2	<0.2	0.2

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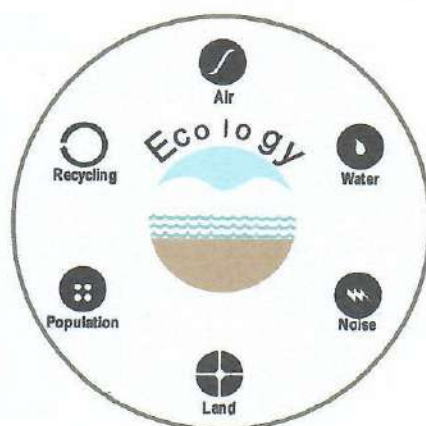
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CMPDI, RI-VII, LAB
BHUBANESWAR

**Environmental Monitoring Report
Of
Orient Area
For
June-2025**

Ib Valley Coalfield



Mahanadi Coalfields Limited



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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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सीएमपीडीआई
AIR QUALITY
LABORATORY
CMPDI
ANALYSIS

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	Dust Generating Source	Distance from DGS
14-Jun-25	Orient Mine No. 1 & 2	171	75	34	10.84	38.89	Coal Stock Yard, Surface Bunker, Coal	About 250m
30-Jun-25	Orient Mine No. 1 & 2	168	79	36	16.84	28.55	Coal Stock Yard, Surface Bunker, Coal	About 250m


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BHUBANESWAR



MoEF Standards Notification dated 25th
September, 2000

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120

Test Report



AMBIENT AIR QUALITY DATA

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	Dust Generating Source	Distance from DGS
14-Jun-25	Orient Mine No. 3	175	78	36	11.96	34.64	Coal Stockyard, Surface Bunker, Coal	About 200m
30-Jun-25	Orient Mine No. 3	195	91	40	14.71	27.77	Coal Stockyard, Surface Bunker, Coal	About 200m


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MoEF Standards Notification dated 25th September, 2000

500	250		120	120
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 केंद्रीय प्रयोगशाला
cmpdi
 ANALYSING

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	Dust Generating Source	Distance from DGS
14-Jun-25	Orient Mine No. 4	168	70	32	18.68	19.45	Coal Transportation Road	About 300m
30-Jun-25	Orient Mine No. 4	181	81	37	13.48	20.34	Coal Transportation Road	About 300m

Authorized Signatory
 CMPDI, XI-VII, LAB
 BHUBANESWAR

MoEF Standards Notification dated 25th September, 2000	500	250		120	120
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cmplab
MANUFACTURING

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	Dust Generating Source	Distance from DGS
14-Jun-25	HBI Mine	171	71	34	12.35	26.86	Coal Stockyard, Surface Bunker, Coal Transport	About 100m
14-Jun-25	Bundia Colony Pump House	179	80	37	10.50	25.16	Coal Stockyard, Surface Bunker, Coal Transport	About 150m
30-Jun-25	HBI Mine	187	86	38	13.14	29.02	Coal Stockyard, Surface Bunker, Coal Transport	About 100m
30-Jun-25	Bundia Colony Pump House	178	85	40	12.88	27.06	Coal Stockyard, Surface Bunker, Coal Transport	About 150m


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BHUBANESWAR



MoEF Standards Notification dated 25th
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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	Dust Generating Source	Distance from DGS
14-Jun-25	Near Rampur Colliery Check Post	182	78	36	12.54	16.98		
14-Jun-25	Near CHP HRC	174	76	35	12.99	39.17		
30-Jun-25	Near Rampur Colliery Check Post	196	93	40	15.12	19.17		
30-Jun-25	Near CHP HRC	190	84	38	12.92	31.55		

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GNPDA, RI-VII, LAB
BHUBANESWAR

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MoEF Standards Notification dated 25th
September, 2000

500	250		120	120
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MINI BOTTLE
cmpdi

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
04-Jun-25	Orient GM Office	160	55	29	9.61	30.30	Domestic and other Anthropogenic Activities	
05-Jun-25	Orient GM Office	123	48	25	14.27	31.68	Domestic and other Anthropogenic Activities	
11-Jun-25	Orient GM Office	143	53	27	19.82	24.48	Domestic and other Anthropogenic Activities	
12-Jun-25	Orient GM Office	114	42	23	9.36	26.45	Domestic and other Anthropogenic Activities	
18-Jun-25	Orient GM Office	136	55	27	12.49	21.49	Domestic and other Anthropogenic Activities	
19-Jun-25	Orient GM Office	119	39	22	15.42	27.46	Domestic and other Anthropogenic Activities	
25-Jun-25	Orient GM Office	155	66	30	13.47	23.26	Domestic and other Anthropogenic Activities	
26-Jun-25	Orient GM Office	118	45	20	12.56	22.30	Domestic and other Anthropogenic Activities	

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BHUBHAR

*NAAQS,2009

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AMBIENT AIR QUALITY DATA

Area : **Orient** (Reference Station)

Project : **Hirakand Bundia Mine (HBM)** (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
04-Jun-25	Rampur Sub Area	146	51	27	19.07	32.70	Coal Stock And CT Road	About 1000m
04-Jun-25	Rampur Officers Guest House	150	55	28	14.70	32.59	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
05-Jun-25	Rampur Officers Guest House	119	40	22	16.26	19.03	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
05-Jun-25	Rampur Sub Area	135	49	26	17.77	30.42	Coal Stock And CT Road	About 1000m
11-Jun-25	Rampur Sub Area	121	45	24	18.08	22.55	Coal Stock And CT Road	About 1000m
11-Jun-25	Rampur Officers Guest House	145	53	27	18.79	22.07	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
12-Jun-25	Rampur Officers Guest House	154	58	29	13.28	30.60	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
12-Jun-25	Rampur Sub Area	156	58	29	15.46	20.90	Coal Stock And CT Road	About 1000m
18-Jun-25	Rampur Sub Area	152	54	29	12.48	22.23	Coal Stock And CT Road	About 1000m
18-Jun-25	Rampur Officers Guest House	167	68	32	12.34	24.60	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
19-Jun-25	Rampur Officers Guest House	135	56	27	16.66	22.33	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
19-Jun-25	Rampur Sub Area	134	47	25	14.82	25.51	Coal Stock And CT Road	About 1000m
25-Jun-25	Rampur Officers Guest House	155	62	29	16.20	21.71	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
25-Jun-25	Rampur Sub Area	125	40	23	14.68	22.69	Coal Stock And CT Road	About 1000m
26-Jun-25	Rampur Sub Area	117	35	20	12.68	28.32	Coal Stock And CT Road	About 1000m
26-Jun-25	Rampur Officers Guest House	126	46	23	13.67	21.35	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m

*NAAQS, 2009		100	60	80	80
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Central Monitoring and Pollution Data Institute
C.M.P.D.I.
COAL INDIA

Test Report

AMBIENT AIR QUALITY DATA

Area :

Orient

(Reference Station)

Project :

HRC

(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
04-Jun-25	Rampur Sub Area (Reported only)	146	51	27	19.07	32.70	Coal Stock And CT Road	About 1000m
04-Jun-25	Rampur Officers Guest House (Reported only)	150	55	28	14.70	32.59	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
05-Jun-25	Rampur Officers Guest House (Reported only)	119	40	22	16.26	19.03	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
05-Jun-25	Rampur Sub Area (Reported only)	135	49	26	17.77	30.42	Coal Stock And CT Road	About 1000m
11-Jun-25	Rampur Sub Area (Reported only)	121	45	24	18.08	22.55	Coal Stock And CT Road	About 1000m
11-Jun-25	Rampur Officers Guest House (Reported only)	145	53	27	18.79	22.07	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
12-Jun-25	Rampur Officers Guest House (Reported only)	154	58	29	13.28	30.60	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
12-Jun-25	Rampur Sub Area (Reported only)	156	58	29	15.46	20.90	Coal Stock And CT Road	About 1000m
18-Jun-25	Rampur Sub Area (Reported only)	152	54	29	12.48	22.23	Coal Stock And CT Road	About 1000m
18-Jun-25	Rampur Officers Guest House (Reported only)	167	68	32	12.34	24.60	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
19-Jun-25	Rampur Officers Guest House (Reported only)	135	56	27	16.66	22.33	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
19-Jun-25	Rampur Sub Area (Reported only)	134	47	25	14.82	25.51	Coal Stock And CT Road	About 1000m
25-Jun-25	Rampur Officers Guest House (Reported only)	155	62	29	16.20	21.71	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
25-Jun-25	Rampur Sub Area (Reported only)	125	40	23	14.68	22.69	Coal Stock And CT Road	About 1000m
26-Jun-25	Rampur Sub Area (Reported only)	117	35	20	12.68	28.32	Coal Stock And CT Road	About 1000m
26-Jun-25	Rampur Officers Guest House (Reported only)	126	46	23	13.67	21.35	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m

*NAAQS, 2009

100	60	80	80
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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Orient

Project	Orient Mine No.2							
Monitoring Station	Orient GM Office							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (α) Pyrene	Benzen e
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)	(mg/m^3)	(ng/m^3)	($\mu\text{g}/\text{m}^3$)
04-Apr-2025	<20.0	25.53	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
05-Apr-2025	<20.0	21.57	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
11-Apr-2025	<20.0	25.53	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
12-Apr-2025	<20.0	23.55	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
18-Apr-2025	<20.0	15.12	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
19-Apr-2025	<20.0	18.35	<0.1	<1.0	<1.0	1.3	BQL(QL=0.7)	BQL
25-Apr-2025	<20.0	14.38	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
26-Apr-2025	<20.0	18.35	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
Standard	400 (24hours)	180 (hour)	1.0 (24hours)	6.0 Annual)	20 (Annual)	02 (8 hours)	01(annual)	05(annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Orient

Project	Orient Mine No.2							
Monitoring Station	VIP Guest House, IB Valley (Reported Only)							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (α) Pyrene	Benzen e
	(µg/m ³)	(µg/m ³)	(µg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)	(ng/m ³)	(µg/m ³)
02-Jun-2025	<20.0	22.07	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
03-Jun-2025	<20.0	19.68	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
09-Jun-2025	<20.0	26.28	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
10-Jun-2025	<20.0	21.32	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
16-Jun-2025	<20.0	17.60	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
17-Jun-2025	<20.0	14.88	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
23-Jun-2025	<20.0	15.87	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
24-Jun-2025	<20.0	18.85	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
27-Jun-2025	<20.0	16.92	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
28-Jun-2025	<20.0	17.32	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
Standard	400 (24hours)	180 (hour)	1.0 (24hours)	6.0 Annual	20 (Annual)	02 (8 hours)	01(annual)	05(annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Orient

Project	HBI Mine							
Monitoring Station	Rampur Officers Guest House							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (a) Pyrene	Benzene
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)	(mg/m^3)	(ng/m^3)	($\mu\text{g}/\text{m}^3$)
04-Jun-2025	<20.0	19.33	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
05-Jun-2025	<20.0	16.62	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
11-Jun-2025	<20.0	22.82	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
12-Jun-2025	<20.0	27.27	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
18-Jun-2025	<20.0	17.85	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
19-Jun-2025	<20.0	23.80	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
25-Jun-2025	<20.0	14.38	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
26-Jun-2025	<20.0	21.32	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
Standard	400 (24hours)	180 (hour)	1.0 (24hours)	6.0 (Annual)	20 (Annual)	02 (8 hours)	01(annual)	05(annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Orient

Project	HBI Mine							
Monitoring Station	Rampur Sub Area							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (α) Pyrene	Benzene
	(µg/m ³)	(µg/m ³)	(µg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)	(ng/m ³)	(µg/m ³)
04-Jun-2025	<20.0	23.80	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
05-Jun-2025	<20.0	18.85	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
11-Jun-2025	<20.0	21.07	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
12-Jun-2025	<20.0	17.35	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
18-Jun-2025	<20.0	17.60	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
19-Jun-2025	<20.0	13.88	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
25-Jun-2025	<20.0	16.87	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
26-Jun-2025	<20.0	15.87	<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 (8 hours)	01(annual)	05(annual)

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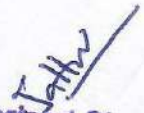


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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Orient

Project	HRC							
Monitoring Station	Rampur Officers Guest House (Reported Only)							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (α) Pyrene	Benzene
	(µg/m ³)	(µg/m ³)	(µg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)	(ng/m ³)	(µg/m ³)
04-Jun-2025	<20.0	19.33	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
05-Jun-2025	<20.0	16.62	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
11-Jun-2025	<20.0	22.82	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
12-Jun-2025	<20.0	27.27	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
18-Jun-2025	<20.0	17.85	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
19-Jun-2025	<20.0	23.80	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
25-Jun-2025	<20.0	14.38	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
26-Jun-2025	<20.0	21.32	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
Standard	400 (24hours)	180 (hour)	1.0 (24hours)	6.0 (Annual)	20 (Annual)	02 (8 hours)	01(annual)	05(annual)


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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Orient

Project	HRC Mine							
Monitoring Station	Rampur Sub Area (Reported only)							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (α) Pyrene	Benzene
	(µg/m ³)	(µg/m ³)	(µg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)	(ng/m ³)	(µg/m ³)
04-Jun-2025	<20.0	23.80	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
05-Jun-2025	<20.0	18.85	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
11-Jun-2025	<20.0	21.07	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
12-Jun-2025	<20.0	17.35	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
18-Jun-2025	<20.0	17.60	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
19-Jun-2025	<20.0	13.88	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
25-Jun-2025	<20.0	16.87	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
26-Jun-2025	<20.0	15.87	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
Standard	400 (24hours)	180 (hour)	1.0 (24hours)	6.0 (Annual)	20 (Annual)	02 (8 hours)	01(annual)	05(annual)

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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
02-Jun-25	Orient Mine No. 1 & 2	60.4	55.2
02-Jun-25	VIP Guest House, IB Valley (Reported Only)	51.8	42.9
23-Jun-25	Orient Mine No. 1 & 2	64.8	60.7
23-Jun-25	VIP Guest House, IB Valley (Reported Only)	50.4	40.9

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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Mine Planning

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
02-Jun-25	Orient Mine No.3	61.9	58.4
23-Jun-25	Orient Mine No.3	59.2	53.6

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--

NOISE LEVEL MONITORING DATA

AREA :

Orient

PROJECT :

Orient Mine No.4

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
02-Jun-25	Orient Mine No.4	60.7	57.3
23-Jun-25	Orient Mine No.4	63.4	58.9

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--

NOISE LEVEL MONITORING DATA

AREA :

Orient

PROJECT :

HBI Mine

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
02-Jun-25	HBI Mine	63.5	59.1
02-Jun-25	Bundia Colony Pump House	60.2	56.4
02-Jun-25	Rampur Officer's Guest House	50.9	42.3
02-Jun-25	Rampur Sub Area (Reported)	51.9	42.1
23-Jun-25	HBI Mine	65.2	62.7
23-Jun-25	Rampur Officer's Guest House	50.6	42.9
23-Jun-25	Bundia Colony Pump House	58.4	52.3
23-Jun-25	Rampur Sub Area (Reported)	51.2	42.4

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--

NOISE LEVEL MONITORING DATA

AREA :

Orient

PROJECT :

HRC

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
02-Jun-25	Near CHP HRC	62.2	57.4
02-Jun-25	Near Rampur Colliery Check Post	60.5	54.9
23-Jun-25	Near CHP HRC	60.7	54.3
23-Jun-25	Near Rampur Colliery Check Post	58.6	52.8

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)

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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
12-Jun-25	Mine Sump of Mine No. 2	7.29	<4.0	17	24	-	-	-	

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Kutw

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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TABLE--

EFFLUENT QUALITY DATA

Area :

Orient

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

Project :

Orient Mine No. 3

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	TDS	DO	Remarks
12-Jun-25	Mine Sump of Mine No. 3	7.00	<4.0	19	20	-	-	-	
27-Jun-25	Mine Sump of Mine No. 3	6.91	<4.0	27	12	-	-	-	

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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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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
12-Jun-25	Mine Sump of Mine No. 4	6.90	<4.0	28	12	-	-	-	

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Jathu

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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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
12-Jun-25	Mine Sump of HBM	7.14	<4.0	24	20	-	-	-	


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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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Drinking Water Quality Data Orient Area

Project / OCP	Orient Mine No. 1 & 2		Indian Drinking Standards (IS-10500):2012	
	Budhjaam Colony	Mine no 1 & 2 Filter Plant	Acceptable	Permissible
Monitoring Station	13-Jun-2025	13-Jun-2025		
Date of Sampling	13-Jun-2025	13-Jun-2025	Acceptable	Permissible
Colour(Hazen)	1	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	3	2	1	5
pH	6.81	7.23	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	64	120	200	600
Chloride(mg/L)	8	16	250	1000
Sulphate(mg/L)	13.67	14.72	200	400
Nitrate(mg/L)	<0.5	<0.5	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	88	104	200	600
Calcium(mg/L)	28.8	14.4	75	200
Fluoride(mg/L)	0.52	0.39	1	1.5
Total Dissolve Solid(mg/L)	130	215	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


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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	13-Jun-2025	13-Jun-2025	Acceptable	Permissible
Selenium(mg/L)	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	14.25	17.13	-	-
Potassium(mg/L)	1.96	4.00	-	-
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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Project / OCP	Orient Mine No. 3	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	Mine no 3 Filter Plant	Acceptable	Permissible
Date of Sampling	13-Jun-2025	Acceptable	Permissible
Colour(Hazen)	1	5	15
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	1	5
pH	6.70	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	164	200	600
Chloride(mg/L)	16	250	1000
Sulphate(mg/L)	24.86	200	400
Nitrate(mg/L)	<0.5	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	92	200	600
Calcium(mg/L)	12.8	75	200
Fluoride(mg/L)	<0.3	1	1.5
Total Dissolve Solid(mg/L)	200	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

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Project / OCP	Orient Mine No. 3 Mine no 3 Filter Plant	Indian Drinking Standards (IS-10500):2012	
		Acceptable	Permissible
Monitoring Station	13-Jun-2025		
Date of Sampling			
Selenium(mg/L)	<0.005	0.01	No relaxation
Sodium(mg/L)	14.03	-	-
Potassium(mg/L)	4.02	-	-
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	-	-


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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	13-Jun-2025	13-Jun-2025		
Date of Sampling	13-Jun-2025	13-Jun-2025	Acceptable	Permissible
Colour(Hazen)	2	3	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	3	1	5
pH	7.01	6.69	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	120	56	200	600
Chloride(mg/L)	12	8	250	1000
Sulphate(mg/L)	6.52	10.56	200	400
Nitrate(mg/L)	<0.5	<0.5	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	104	100	200	600
Calcium(mg/L)	24	22.4	75	200
Fluoride(mg/L)	0.68	0.44	1	1.5
Total Dissolve Solid(mg/L)	210	190	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

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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		
Monitoring Station				
Date of Sampling	13-Jun-2025	13-Jun-2025	Acceptable	Permissible
Selenium(mg/L)	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	16.11	16.30	—	—
Potassium(mg/L)	3.8	4.22	—	—
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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Piezometer Water Quality Data: Orient Area

Project / OCP	Orient Mine No. 1 & 2	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	MIP 03 (Beside IB Valley GM Office)	Acceptable	Permissible
Date of Sampling	28-May-25	Acceptable	Permissible
Colour(Hazen)	3	5	15
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	1	5
pH	6.97	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	237.48	200	600
Chloride(mg/L)	17.61	250	1000
Sulphate(mg/L)	70.55	200	400
Nitrate(mg/L)	<0.50	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	214.86	200	600
Calcium(mg/L)	59.09	75	200
Fluoride(mg/L)	0.55	1	1.5
Total Dissolve Solid(mg/L)	368	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	0.3	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	0.05
Selenium (mg/L)	<0.005	0.01	No relaxation
Boron(mg/L)	<0.2	0.5	1
Sodium mg/L	16.76	-	-
Potassium mg/L	0.7	-	-
Phenolics (mg/L)	<0.001	0.001	0.002
Residual Free Chlorine (mg/L)	<0.2	0.2	1
MPN (Index/100ml)	Not Detected	-	-

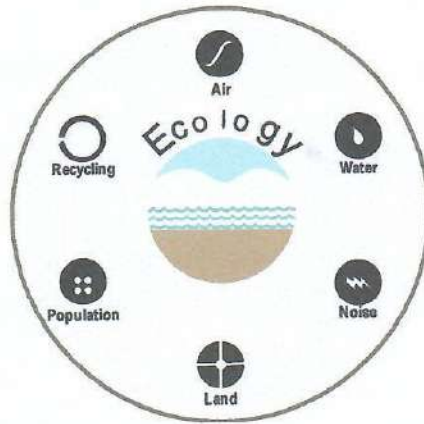
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**Environmental Monitoring Report
Of
MCL HQ
For
June-2025**

IB Valley Coalfield



Mahanadi Coalfields Limited



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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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Drinking Water Quality Data MCL (HQ)

Project / OCP	MCL (HQ)		Indian Drinking Standards (IS-10500):2012	
	Monitoring Station	DAV School (Anand vihar)	Corporate Office (Jagrithi Vihar)	
Date of Sampling	14-Jun-2025	14-Jun-2025	Acceptable	Permissible
Colour(Hazen)	2	3	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	4	4	1	5
pH	7.56	7.70	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	160	80	200	600
Chloride(mg/L)	12	10	250	1000
Sulphate(mg/L)	7.78	14.76	200	400
Nitrate(mg/L)	<0.5	<0.5	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	80	84	200	600
Calcium(mg/L)	17.6	16	75	200
Fluoride(mg/L)	0.93	<0.3	1	1.5
Total Dissolve Solid(mg/L)	186	160	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

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A. S. S.



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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)		
Date of Sampling	14-Jun-2025	14-Jun-2025	Acceptable	Permissible
Colour(Hazen)	2	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	3	2	1	5
pH	7.20	7.59	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	92	84	200	600
Chloride(mg/L)	12	16	250	1000
Sulphate(mg/L)	12.13	15.76	200	400
Nitrate(mg/L)	<0.5	<0.5	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	80	76	200	600
Calcium(mg/L)	28.8	19.2	75	200
Fluoride(mg/L)	<0.3	0.65	1	1.5
Total Dissolve Solid(mg/L)	155	150	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

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Drinking Water Quality Data MCL (HQ)

Project / OCP	MCL (HQ)		Indian Drinking Standards (IS-10500):2012	
	DAV School (Anand vihar)	Corporate Office (Jagriti Vihar)	Acceptable	Permissible
Monitoring Station				
Date of Sampling	14-Jun-2025	14-Jun-2025	Acceptable	Permissible
Selenium(mg/L)	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	14.76	14.30		
Potassium(mg/L)	1.91	1.88		
Phenolics(mg/L)	<0.001	<0.001	0.001	0.001
Residual Free Chlorine(mg/L)	<0.2	<0.2	0.2	1
MPN (Index/100 ml)	Not Detected	Not Detected	-	-

Project / OCP	MCL(HQ)		Indian Drinking Standards (IS-10500):2012	
	Inlet to Water Treatment Plant (Anand Vihar)	Outlet to Water Treatment Plant (Anand Vihar)	Acceptable	Permissible
Monitoring Station				
Date of Sampling	14-Jun-2025	14-Jun-2025	Acceptable	Permissible
Selenium(mg/L)	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	14.35	15.03		
Potassium(mg/L)	1.57	1.86		
Phenolics(mg/L)	<0.001	<0.001	0.001	0.001
Residual Free Chlorine(mg/L)	<0.2	<0.2	0.2	1
MPN (Index/100 ml)	Not Detected	Not Detected	-	-

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