

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

Ib Valley Coalfield



MCL

Mahanadi Coalfields Limited



cmpdi

A Miniratna Company

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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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-Aug-25	West of the Mine	219	98	45	16.13	24.98	Distance From 'y' Curve Railway Siding	About 450m
06-Aug-25	South of the Mine	192	84	39	13.93	18.78	Mine Haul Roads	About 400m
06-Aug-25	East of the Mine	202	110	44	16.11	32.18	Coal Transportation Road	About 500m
16-Aug-25	West of the Mine	190	85	39	16.09	29.89	Distance From 'y' Curve Railway Siding	About 450m
16-Aug-25	South of the Mine	186	85	37	9.84	22.03	Mine Haul Roads	About 400m
16-Aug-25	East of the Mine	203	110	44	12.31	26.53	Coal Transportation Road	About 500m


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 CMPDI, RI-VII, LAB
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MoEF Standards Notification dated 25th September, 2000

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Test Report



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AMBIENT AIR QUALITY DATA

Area :

Ib Valley

(Reference Station)

Project :

Samleswari OCP

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

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
01-Aug-25	Rampur Sub Area (Reported only)	133	53	25	13.79	19.29	Coal Stock And CT Road	About 1000m
02-Aug-25	Rampur Sub Area (Reported only)	126	52	21	15.36	33.75	Coal Stock And CT Road	About 1000m
04-Aug-25	Kudaloi Village	125	48	21	12.47	18.82		
05-Aug-25	Kudaloi Village	135	55	24	14.78	21.96		
08-Aug-25	Rampur Sub Area (Reported only)	135	41	23	15.36	28.40	Coal Stock And CT Road	About 1000m
09-Aug-25	Rampur Sub Area (Reported only)	179	72	34	13.87	16.63	Coal Stock And CT Road	About 1000m
11-Aug-25	Kudaloi Village	147	60	28	16.98	27.82		
12-Aug-25	Kudaloi Village	130	56	23	10.59	32.93		
18-Aug-25	Rampur Sub Area (Reported only)	145	59	26	18.07	24.85	Coal Stock And CT Road	About 1000m
19-Aug-25	Rampur Sub Area (Reported only)	139	57	24	10.29	15.37	Coal Stock And CT Road	About 1000m
20-Aug-25	Kudaloi Village	163	75	29	12.47	34.96		
21-Aug-25	Kudaloi Village	148	58	26	14.78	22.41		
25-Aug-25	Rampur Sub Area (Reported only)	145	47	25	15.74	27.61	Coal Stock And CT Road	About 1000m
26-Aug-25	Rampur Sub Area (Reported only)	163	74	30	19.00	24.62	Coal Stock And CT Road	About 1000m
27-Aug-25	Kudaloi Village	130	52	21	16.98	36.50		
28-Aug-25	Kudaloi Village	141	55	24	10.59	26.18		

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BHUBANESWAR

Test Report



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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-Aug-25	Near South Coal Stock	211	105	43	13.94	37.64	Mining Activities, Coal Transportation	About 500m
06-Aug-25	Near Project Office	178	81	37	17.47	40.78	Domestic, OCP, Transportation	About 500m
16-Aug-25	Near South Coal Stock	190	87	38	13.94	21.00	Mining Activities, Coal Transportation	About 500m
16-Aug-25	Near Project Office	182	79	37	17.47	26.31	Domestic, OCP, Transportation	About 500m

Test result
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 BHUBANESWAR

MoEF Standards Notification dated 25th
 September, 2000

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Test Report

AMBIENT AIR QUALITY DATA

Area : **Ib Valley**

(Reference Station)

Project :

Lajkura OCP

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

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
01-Aug-25	Khokelmal	110	39	17	13.89	18.73	Railway siding	About 1000m
01-Aug-25	Chuakani	110	44	19	13.79	17.91	Transportation	About 300m
02-Aug-25	Chuakani	103	33	14	13.26	19.20	Transportation	About 300m
02-Aug-25	Khokelmal	123	49	19	13.89	29.89	Railway siding	About 1000m
04-Aug-25	VIP Guest House IB Valley	145	69	24	15.36	23.78	Coal Stock Yard, Surface Bunker, Coal	About 800m
05-Aug-25	VIP Guest House IB Valley	128	56	20	16.11	37.00	Coal Stock Yard, Surface Bunker, Coal	About 800m
08-Aug-25	Chuakani	123	39	16	13.67	23.22	Transportation	About 300m
08-Aug-25	Khokelmal	139	59	26	12.37	41.22	Railway siding	About 1000m
09-Aug-25	Chuakani	158	73	30	16.20	34.80	Transportation	About 300m
09-Aug-25	Khokelmal	121	47	23	11.32	35.55	Railway siding	About 1000m
11-Aug-25	VIP Guest House IB Valley	164	66	29	13.85	26.30	Coal Stock Yard, Surface Bunker, Coal	About 800m
12-Aug-25	VIP Guest House IB Valley	140	57	26	13.19	16.46	Coal Stock Yard, Surface Bunker, Coal	About 800m
18-Aug-25	Khokelmal	135	53	24	20.12	22.21	Railway siding	About 1000m
18-Aug-25	Chuakani	157	68	29	14.78	17.50	Transportation	About 300m
19-Aug-25	Chuakani	122	48	20	10.89	27.73	Transportation	About 300m
19-Aug-25	Khokelmal	115	35	16	13.89	21.75	Railway siding	About 1000m
20-Aug-25	VIP Guest House IB Valley	144	58	25	13.64	31.84	Coal Stock Yard, Surface Bunker, Coal	About 800m
21-Aug-25	VIP Guest House IB Valley	129	43	20	15.95	20.14	Coal Stock Yard, Surface Bunker, Coal	About 800m
25-Aug-25	Chuakani	114	35	17	11.38	28.57	Transportation	About 300m
25-Aug-25	Khokelmal	132	46	22	12.37	14.18	Railway siding	About 1000m
26-Aug-25	Chuakani	137	53	24	16.94	27.17	Transportation	About 300m
26-Aug-25	Khokelmal	151	64	28	11.32	24.83	Railway siding	About 1000m

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Project :

Lajkura OCP

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

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
27-Aug-25	VIP Guest House IB Valley	139	47	22	16.32	29.30	Coal Stock Yard, Surface Bunker, Coal	About 800m
28-Aug-25	VIP Guest House IB Valley	121	41	16	15.84	17.19	Coal Stock Yard, Surface Bunker, Coal	About 800m


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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: IB Valley

Project		Samleswari OCP						
Monitoring Station		Kudaloi 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)
04-Aug-2025	<20.0	14.42	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
05-Aug-2025	<20.0	19.22	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
11-Aug-2025	<20.0	21.77	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
12-Aug-2025	<20.0	22.05	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
20-Aug-2025	<20.0	13.00	<0.1	<1.0	<1.0	0.2	BQL(QL=0.7)	BQL
21-Aug-2025	<20.0	15.55	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
27-Aug-2025	<20.0	19.22	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
28-Aug-2025	<20.0	11.30	<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

Sameswari OCP								
Project	Rampur Sub Area (Reported Only)							
Monitoring Station	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (a) Pyrene	Benzene
Date of sampling	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)	(mg/m^3)	(ng/m^3)	($\mu\text{g}/\text{m}^3$)
01-Aug-2025	<20.0	12.72	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
02-Aug-2025	<20.0	19.50	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
08-Aug-2025	<20.0	13.57	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
09-Aug-2025	<20.0	17.25	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
18-Aug-2025	<20.0	11.58	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
19-Aug-2025	<20.0	19.50	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
25-Aug-2025	<20.0	12.43	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
26-Aug-2025	<20.0	14.70	<0.1	<1.0	<1.0	0.6	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

Samaleswari OCP

Project	Khokelmal (Reported Only)							
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)
01-Aug-2025	<20.0	19.50	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
02-Aug-2025	<20.0	13.57	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
08-Aug-2025	<20.0	18.93	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
09-Aug-2025	<20.0	11.58	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
18-Aug-2025	<20.0	22.90	<0.1	<1.0	<1.0	0.2	BQL(QL=0.7)	BQL
19-Aug-2025	<20.0	15.27	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
25-Aug-2025	<20.0	11.87	<0.1	<1.0	<1.0	0.2	BQL(QL=0.7)	BQL
26-Aug-2025	<20.0	20.92	<0.1	<1.0	<1.0	0.8	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)

Signature
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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)
04-Aug-2025	<20.0	12.36	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
05-Aug-2025	<20.0	19.85	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
11-Aug-2025	<20.0	14.88	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
12-Aug-2025	<20.0	16.32	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
20-Aug-2025	<20.0	19.68	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
21-Aug-2025	<20.0	13.45	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
27-Aug-2025	<20.0	21.56	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
28-Aug-2025	<20.0	12.12	<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: IB Valley

Project	Lajkura OCP							
Monitoring Station	Chukani							
Date of sampling	Ammonia (NH ₃) (µg/m ³)	Ozone (O ₃) (µg/m ³)	Lead (Pb) (µg/m ³)	Arsenic (As) (ng/m ³)	Nickel (Ni) (ng/m ³)	CO (mg/m ³)	Benzo (α) Pyrene (ng/m ³)	Benzene (µg/m ³)
01-Aug-2025	<20.0	14.70	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
02-Aug-2025	<20.0	21.20	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
08-Aug-2025	<20.0	19.50	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
09-Aug-2025	<20.0	18.65	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
18-Aug-2025	<20.0	23.75	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
19-Aug-2025	<20.0	20.35	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
25-Aug-2025	<20.0	12.72	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
26-Aug-2025	<20.0	21.20	<0.1	<1.0	<1.0	0.9	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
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)	(mg/m^3)	(ng/m^3)	($\mu\text{g}/\text{m}^3$)
01-Aug-2025	<20.0	19.50	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
02-Aug-2025	<20.0	13.57	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
08-Aug-2025	<20.0	18.93	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
09-Aug-2025	<20.0	11.58	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
18-Aug-2025	<20.0	22.90	<0.1	<1.0	<1.0	0.2	BQL(QL=0.7)	BQL
19-Aug-2025	<20.0	15.27	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
25-Aug-2025	<20.0	11.87	<0.1	<1.0	<1.0	0.2	BQL(QL=0.7)	BQL
26-Aug-2025	<20.0	20.92	<0.1	<1.0	<1.0	0.8	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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 CMPDI
 NEW DELHI

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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
04-Aug-25	South of the Mine	52.3	42.5
04-Aug-25	Kudaloi Village	49.2	42.4
04-Aug-25	West of the Mine	49.8	40.6
04-Aug-25	Rampur Sub Area	51.7	40.6
04-Aug-25	East of the Mine	50.6	39.8
04-Aug-25	Khokelmal (Reported Only)	52.1	42.4
20-Aug-25	South of the Mine	52.9	43.2
20-Aug-25	Khokelmal (Reported Only)	49.7	40.3
20-Aug-25	Rampur Sub Area	52.1	42.3
20-Aug-25	East of the Mine	58.2	53.7
20-Aug-25	West of the Mine	49.7	42.4
20-Aug-25	Kudaloi Village	50.6	40.4

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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 :

Ib Valley

PROJECT :

Lajkura OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
04-Aug-25	Near Project Office	62.4	56.9
04-Aug-25	Near South Coal Stock	60.8	54.6
04-Aug-25	Chuakani	50.6	39.5
04-Aug-25	VIP Guest House, IB Valley	49.2	40.8
04-Aug-25	Khokelmal	52.1	42.4
20-Aug-25	Near Project Office	62.4	56.9
20-Aug-25	Near South Coal Stock	60.2	54.6
20-Aug-25	Khokelmal	49.7	40.3
20-Aug-25	Chuakani	32.3	42.6
20-Aug-25	VIP Guest House, IB Valley	50.5	41.2

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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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 CMPDI
 1997-2000

TABLE-

EFFLUENT QUALITY DATA

Area :

Ib Valley

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

Project :

Samaleswari OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	TDS	DO	Remarks
14-Aug-25	Mine Sump Water	5.36	<4.0	26	16	-	-	-	
14-Aug-25	Outlet of ETP	6.50	<4.0	30	32	-	-	-	
14-Aug-25	Inlet of ETP	6.29	<4.0	34	24	-	-	-	
30-Aug-25	Inlet of ETP	6.45	<4.0	26	32	-	-	-	
30-Aug-25	Outlet of ETP	6.57	<4.0	23	20	-	-	-	

Hatwath
 Authorised Signatory
 CMPDI, RI-VII, LAB
 BHUBANESWAR

MoEF Standard Notification dated 25th September, 2000 and MoEF Schedule VI, General standard for discharge of Environmental Pollutants Part A: Effluents	5.5-9.0	10	100	250	30
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cmpdi
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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
14-Aug-25	STP Inlet	6.21	-	39	-	16	-	-	63
14-Aug-25	STP Outlet	6.70	-	27	-	8	-	-	46
30-Aug-25	STP Outlet	6.45	-	30	-	6	-	-	84
30-Aug-25	STP Inlet	6.76	-	42	-	14	-	-	94

K. Pattnaik
 Authorised Signatory
 CMPDI, RI-VII, LAB
 BHUBANESWAR

Effluent discharge standards (applicable to all mode of disposal), Sewage Treatment Plants (STPs)	6.5-9.5	-	<100	-	30	-	<1000
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सीएमपीडीआई
RI-VII
cmpdi
Bhubaneswar

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
14-Aug-25	Inlet of MDTP	3.24	<4.0	28	32	-	-	-	
14-Aug-25	Outlet of MDTP	3.29	<4.0	46	64	-	-	-	
14-Aug-25	Outlet of ETP	6.81	<4.0	22	12	-	-	-	
14-Aug-25	Inlet of ETP	6.70	<4.0	42	36	-	-	-	
14-Aug-25	Lajkura Railway Siding	3.82	<4.0	50	128	-	-	-	
14-Aug-25	Mine Sump Water	3.17	<4.0	20	16	-	-	-	
30-Aug-25	Mine Sump Water	6.42	<4.0	33	32	-	-	-	
30-Aug-25	Inlet of ETP	6.76	<4.0	34	28	-	-	-	
30-Aug-25	Outlet of ETP	6.63	<4.0	26	20	-	-	-	

Katpuzari
Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

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

5.5-9.0	10	100	250	30
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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
14-Aug-25	STP Outlet	7.35	-	32	-	4.0	-	-	70
14-Aug-25	STP Inlet	7.27	-	43	-	6.0	-	-	84
30-Aug-25	STP Outlet	7.32	-	22	-	8	-	-	63
30-Aug-25	STP Inlet	7.12	-	33	-	10	-	-	76


 Authorised Signatory
 CMPDI, RI-VII, LAB
 BHUBANESWAR

G.S.R. 126 5(E) Effluent discharge standards (applicable to all mode of disposal), Sewage Treatment Plants (STPs)	6.5-9.5	-	<100	-	30	-	<1000
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 1986-87
cmpdi
 1986-87

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
14-Aug-25	Discharge of Hospital	6.50	<4.0	16	8	<2	-	-	

K. Anand
 Authorised Signatory
 CMPDI, RI-VII, LAB
 BHUBANESHWAR

MoEF Standard Notification dated 25th September, 2009
 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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भुवनेश्वर

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		
Date of Sampling	14-Aug-2025	14-Aug-2025	Acceptable	Permissible
Colour(Hazen)	3	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	1	1	5
pH	7.88	7.00	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	58.82	151.27	200	600
Chloride(mg/L)	81.60	34.97	250	1000
Sulphate(mg/L)	55.78	18.56	200	400
Nitrate(mg/L)	40.93	<0.5	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	160.80	94.12	200	600
Calcium(mg/L)	48.73	23.58	75	200
Fluoride(mg/L)	0.69	0.32	1	1.5
Total Dissolve Solid(mg/L)	410	216	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)	<0.005	<0.005	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

Katansh
Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR



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मिनी रोड
cmpdi
Mini Road

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	14-Aug-2025	14-Aug-2025	Acceptable	Permissible
Selenium(mg/L)	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	21.12	7.01		
Potassium(mg/L)	12.63	12.63		
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	-	-

Followed
Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR



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Drinking Water Quality Data IB Valley Area

Project / OCP	Samleswari OCP			Indian Drinking Standards (IS-10500):2012	
	Inlet Water from IWSS, IB Valley Area	Outlet Water from IWSS, IB Valley Area	Well Water From Lajkura		
Date of Sampling	14-Aug-2025	14-Aug-2025	14-Aug-2025	Acceptable	Permissible
Colour(Hazen)	1	3	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	4	1	1	5
pH	7.12	6.72	6.33	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	37.81	16.80	33.61	200	600
Chloride(mg/L)	11.65	15.54	73.83	250	1000
Sulphate(mg/L)	27.5	30.65	72.5	200	400
Nitrate(mg/L)	9.0	1.60	42.68	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	39.22	47.06	168.64	200	600
Calcium(mg/L)	9.43	12.57	47.16	75	200
Fluoride(mg/L)	<0.3	0.45	0.84	1	1.5
Total Dissolve Solid(mg/L)	106	94	406	500	2000
Copper(mg/L)	<0.03	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	0.05	<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	0.06	0.04	5	15
Lead(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Cadmium(mg/L)	<0.005	<0.005	<0.005	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

H. Jaisankar

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR



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रिसेच लैब
cmpdi
Water Testing

Drinking Water Quality Data IB Valley Area

Project / OCP	Samleswari OCP			Indian Drinking Standards (IS-10500):2012	
	Inlet Water from IWSS, IB Valley Area	Outlet Water from IWSS, IB Valley Area	Well Water From Lajkura	Acceptable	Permissible
Date of Sampling	14-Aug-2025	14-Aug-2025	14-Aug-2025	Acceptable	Permissible
Selenium(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	8.80	8.57	12.42		
Potassium(mg/L)	1.86	1.76	1.35		
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	-	-

Handwritten Signature
Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR



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RBI Bhubra

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	14-Aug-2025	14-Aug-2025	Acceptable	Permissible
Colour(Hazen)	2	3	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	3	4	1	5
pH	6.43	6.62	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	75.63	159.67	200	600
Chloride(mg/L)	36.91	58.29	250	1000
Sulphate(mg/L)	25.00	52.26	200	400
Nitrate(mg/L)	8.80	12.09	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	78.44	172.56	200	600
Calcium(mg/L)	25.15	44.01	75	200
Fluoride(mg/L)	0.46	0.68	1	1.5
Total Dissolve Solid(mg/L)	185	320	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)	<0.005	<0.005	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

Tattanaik
Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR



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cmpdi
Mini katha

Drinking Water Quality Data IB Valley Area

Project / OCP	Lajkura OCP		Indian Drinking Standards (IS-10500):2012	
	Madhuban Nagar Well Water	Adarsh Nagar Colony Well Water	Acceptable	Permissible
Monitoring Station				
Date of Sampling	14-Aug-2025	14-Aug-2025	Acceptable	Permissible
Selenium(mg/L)	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	14.73	5.81	-	-
Potassium(mg/L)	6.14	2.44	-	-
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	-	-

Anjanika
Responsible Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR



सीएमपीडीआई
मिनि लैब
cmpdi
Mini Lab

Drinking Water Quality Data IB Valley Area

Project / OCP	Lajkura OCP		Indian Drinking Standards (IS-10500):2012	
	Chhualiberna Village Well Water	VIP Guest House Tap Water	Acceptable	Permissible
Monitoring Station				
Date of Sampling	14-Aug-2025	14-Aug-2025		
Colour(Hazen)	2	3	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	2	1	5
pH	6.41	7.03	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	54.62	100.84	200	600
Chloride(mg/L)	23.31	21.37	250	1000
Sulphate(mg/L)	21.7	18.94	200	400
Nitrate(mg/L)	7.89	2.14	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	78.44	82.36	200	600
Calcium(mg/L)	25.15	20.43	75	200
Fluoride(mg/L)	0.34	0.52	1	1.5
Total Dissolve Solid(mg/L)	159	165	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	0.32	5	15
Lead(mg/L)	<0.005	<0.005	0.01	No relaxation
Cadmium(mg/L)	<0.005	<0.005	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

Hattarain

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR



सीएमपीडीआई
रि-वी एल
cmpdi
Mini Ratna

Drinking Water Quality Data IB Valley Area

Project / OCP	Lajkura OCP		Indian Drinking Standards (IS-10500):2012	
	Chhualiberna Village Well Water	VIP Guest House Tap Water	Acceptable	Permissible
Monitoring Station				
Date of Sampling	14-Aug-2025	14-Aug-2025		
Selenium(mg/L)	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	10.54	7.07		
Potassium(mg/L)	6.10	10.34		
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/100 ml)	Not Detected	Not Detected	-	-

Hattansuk

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

Legend
Monitoring Station

Samleswari OCP

Khokhimgai

Rampur Sub Area

West of the Mine

South of the Mine

Kudalor Village



Google Earth



Lajkura OCP

Legend

Monitoring Station

Chualkani

MP Guest House, IB Valley

Koorkimal

Near Project Office

Near South Coal Stock

Google Earth



**Environmental Monitoring Report
Of
LBL Area
For
August-2025**

Ib Valley Coalfield



Mahanadi Coalfields Limited



cmpdi

A Miniratna Company

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]

The test report shall not be reproduced in part or full without written approval of the competent authority



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-Aug-25	West of Lakhanpur Quarry Near Solada	205	87	41	14.55	23.99	Mining Activities	About 500m
07-Aug-25	Kirulbal Village	163	65	28	12.10	24.20	Mining Activities	About 500m
07-Aug-25	BOCM Workshop	206	94	41	16.20	36.42	Mining Activities	About 500m
07-Aug-25	Lilari Magazine House	189	88	40	10.75	24.47	Coal Transportation	About 500m
22-Aug-25	West of Lakhanpur Quarry Near Solada	206	95	43	17.55	19.33	Mining Activities	About 500m
22-Aug-25	Kirulbal Village	202	110	43	12.10	18.10	Mining Activities	About 500m
22-Aug-25	BOCM Workshop	213	102	45	17.74	25.74	Mining Activities	About 500m
22-Aug-25	Lilari Magazine House	189	93	40	10.75	21.75	Coal Transportation	About 500m

Authorised Signatory

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

Authorised Signatory

MoEF Standards Notification dated 25th
September, 2009

500	250		120	120
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AMBIENT AIR QUALITY DATAArea : **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
01-Aug-25	Bartap Village North West of Mine	112	37	15	15.35	34.50	Domestic Anthropogenic Source	
01-Aug-25	Ardhapara Village South East of Mine	135	56	25	13.86	34.16		
01-Aug-25	Gumadera Village North of Mine	153	56	27	16.19	29.93	Domestic Source and Mining Activities	About 3km
01-Aug-25	Ramada Village South of Mine	139	52	23	15.36	26.85	Domestic Anthropogenic Source	
01-Aug-25	Lakhanpur Police Station West of Mine	161	69	28	12.45	22.09	Mining Activities	About 1.6km
01-Aug-25	Barihapali Village South West of Mine	168	73	31	13.24	20.50	Domestic Anthropogenic Source	
01-Aug-25	Kadam Rehab Centre East of Mine	158	72	25	16.25	32.48	Mining Activities	About 2km
02-Aug-25	Kadam Rehab Centre East of Mine	119	54	21	14.55	32.71	Mining Activities	About 2km
02-Aug-25	Lakhanpur Police Station West of Mine	128	40	23	13.44	39.28	Mining Activities	About 1.6km
02-Aug-25	Bartap Village North West of Mine	128	48	25	13.85	29.06	Domestic Anthropogenic Source	
02-Aug-25	Gumadera Village North of Mine	146	73	24	14.47	19.51	Domestic Source and Mining Activities	About 3km
02-Aug-25	Barihapali Village South West of Mine	135	48	23	16.20	31.56	Domestic Anthropogenic Source	
02-Aug-25	Ramada Village South of Mine	122	43	17	13.85	31.83	Domestic Anthropogenic Source	
02-Aug-25	Ardhapara Village South East of Mine	143	69	28	13.85	28.37		
08-Aug-25	Kadam Rehab Centre East of Mine	133	73	27	16.13	23.37	Mining Activities	About 2km
08-Aug-25	Lakhanpur Police Station West of Mine	143	53	25	11.00	33.88	Mining Activities	About 1.6km
08-Aug-25	Gumadera Village North of Mine	168	72	20	14.04	21.74	Domestic Source and Mining Activities	About 3km
08-Aug-25	Ramada Village South of Mine	131	48	20	13.80	23.43	Domestic Anthropogenic Source	
08-Aug-25	Bartap Village North West of Mine	114	43	20	15.89	33.33	Domestic Anthropogenic Source	
08-Aug-25	Barihapali Village South West of Mine	121	40	16	15.52	20.93	Domestic Anthropogenic Source	
08-Aug-25	Ardhapara Village South East of Mine	132	55	23	15.32	25.25		
09-Aug-25	Ramada Village South of Mine	143	64	26	14.61	19.70	Domestic Anthropogenic Source	

*N44QS,2009

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Project :

LBL OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
09-Aug-25	Kadam Rehab Centre East of Mine	126	43	22	13.80	31.70	Mining Activities	About 2km
09-Aug-25	Bartap Village North West of Mine	109	40	17	13.67	25.95	Domestic Anthropogenic Source	
09-Aug-25	Barihapali Village South West of Mine	120	50	23	13.73	23.32	Domestic Anthropogenic Source	
09-Aug-25	Lakhanpur Police Station West of Mine	111	42	17	12.73	38.58	Mining Activities	About 1.6km
09-Aug-25	Ardhapara Village South East of Mine	116	44	20	13.88	24.27		
09-Aug-25	Gumadera Village North of Mine	107	75	16	15.36	26.86	Domestic Source and Mining Activities	About 3km
18-Aug-25	Bartap Village North West of Mine	136	52	25	14.73	34.70	Domestic Anthropogenic Source	
18-Aug-25	Ardhapara Village South East of Mine	154	76	30	14.95	39.89		
18-Aug-25	Gumadera Village North of Mine	163	79	33	18.02	34.00	Domestic Source and Mining Activities	About 3km
18-Aug-25	Barihapali Village South West of Mine	132	54	23	14.20	20.55	Domestic Anthropogenic Source	
18-Aug-25	Lakhanpur Police Station West of Mine	154	64	29	12.45	21.31	Mining Activities	About 1.6km
18-Aug-25	Ramada Village South of Mine	131	45	21	18.31	24.72	Domestic Anthropogenic Source	
18-Aug-25	Kadam Rehab Centre East of Mine	108	36	17	18.07	28.98	Mining Activities	About 2km
19-Aug-25	Kadam Rehab Centre East of Mine	151	63	27	13.18	34.37	Mining Activities	About 2km
19-Aug-25	Lakhanpur Police Station West of Mine	140	54	25	13.44	25.50	Mining Activities	About 1.6km
19-Aug-25	Bartap Village North West of Mine	144	62	27	17.01	18.25	Domestic Anthropogenic Source	
19-Aug-25	Gumadera Village North of Mine	141	62	24	18.26	27.03	Domestic Source and Mining Activities	About 3km
19-Aug-25	Barihapali Village South West of Mine	120	38	18	18.40	22.81	Domestic Anthropogenic Source	
19-Aug-25	Ramada Village South of Mine	124	40	18	14.97	29.28	Domestic Anthropogenic Source	
19-Aug-25	Ardhapara Village South East of Mine	140	58	25	13.40	19.38		
25-Aug-25	Kadam Rehab Centre East of Mine	157	74	30	21.83	34.36	Mining Activities	About 2km
25-Aug-25	Ramada Village South of Mine	109	38	16	13.72	24.11	Domestic Anthropogenic Source	
25-Aug-25	Lakhanpur Police Station West of Mine	105	38	16	11.00	32.06	Mining Activities	About 1.6km
25-Aug-25	Gumadera Village North of Mine	152	67	29	19.18	22.00	Domestic Source and Mining Activities	About 3km
25-Aug-25	Bartap Village North West of Mine	171	74	33	19.33	23.71	Domestic Anthropogenic Source	

*N.A.Q.S, 2009

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Signature

Project :

LBL OCP

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

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
25-Aug-25	Berihapali Village South West of Mine	137	53	24	10.96	30.46	Domestic Anthropogenic Source	
25-Aug-25	Ardhapara Village South East of Mine	115	37	16	19.80	19.21		
26-Aug-25	Ramada Village South of Mine	141	55	24	13.87	22.03	Domestic Anthropogenic Source	
26-Aug-25	Kadam Rehab Centre East of Mine	122	45	19	14.43	34.65	Mining Activities	About 2km
26-Aug-25	Bartap Village North West of Mine	114	42	19	17.02	24.65	Domestic Anthropogenic Source	
26-Aug-25	Berihapali Village South West of Mine	153	70	28	18.98	29.01	Domestic Anthropogenic Source	
26-Aug-25	Lakhanpur Police Station West of Mine	154	61	28	12.73	23.43	Mining Activities	About 1.6km
26-Aug-25	Ardhapara Village South East of Mine	122	50	20	16.88	31.69		
26-Aug-25	Gumadera Village North of Mine	137	47	25	16.28	27.65	Domestic Source and Mining Activities	About 3km

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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)
01-Aug-2025	<20.0	13.00	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
02-Aug-2025	<20.0	11.87	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
08-Aug-2025	<20.0	14.13	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
09-Aug-2025	<20.0	20.92	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
18-Aug-2025	<20.0	20.92	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
19-Aug-2025	<20.0	20.07	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
25-Aug-2025	<20.0	13.57	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
26-Aug-2025	<20.0	22.90	<0.1	<1.0	<1.0	0.4	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: 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)	($\mu\text{g}/\text{m}^3$)
01-Aug-2025	<20.0	18.93	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
02-Aug-2025	<20.0	22.62	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
08-Aug-2025	<20.0	20.35	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
09-Aug-2025	<20.0	16.68	<0.1	<1.0	<1.0	0.2	BQL(QL=0.7)	BQL
18-Aug-2025	<20.0	12.15	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
19-Aug-2025	<20.0	18.93	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
25-Aug-2025	<20.0	12.15	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
26-Aug-2025	<20.0	20.07	<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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Jaganath



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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Lakhapur

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 (a) 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)	($\mu\text{g}/\text{m}^3$)
01-Aug-2025	<20.0	23.47	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
02-Aug-2025	<20.0	11.58	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
08-Aug-2025	<20.0	11.58	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
09-Aug-2025	<20.0	11.58	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
18-Aug-2025	<20.0	23.18	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
19-Aug-2025	<20.0	12.43	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
25-Aug-2025	<20.0	12.72	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
26-Aug-2025	<20.0	12.72	<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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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)	($\mu\text{g}/\text{m}^3$)
01-Aug-2025	<20.0	20.07	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
02-Aug-2025	<20.0	16.40	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
08-Aug-2025	<20.0	14.70	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
09-Aug-2025	<20.0	13.85	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
18-Aug-2025	<20.0	21.20	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
19-Aug-2025	<20.0	18.37	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
25-Aug-2025	<20.0	14.42	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
26-Aug-2025	<20.0	20.35	<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	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
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)	(mg/m^3)	(ng/m^3)	($\mu\text{g}/\text{m}^3$)
01-Aug-2025	<20.0	17.25	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
02-Aug-2025	<20.0	11.87	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
08-Aug-2025	<20.0	18.65	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
09-Aug-2025	<20.0	13.57	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
18-Aug-2025	<20.0	18.65	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
19-Aug-2025	<20.0	15.83	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
25-Aug-2025	<20.0	23.75	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
26-Aug-2025	<20.0	11.58	<0.1	<1.0	<1.0	0.2	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: Lakhapur

Project	LBL OCP							
Monitoring Station	Bartap Village North West of Mine							
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 ($\mu\text{g}/\text{m}^3$)
01-Aug-2025	<20.0	13.85	<0.1	<1.0	<1.0	0.2	BQL(QL=0.7)	BQL
02-Aug-2025	<20.0	24.03	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
08-Aug-2025	<20.0	17.82	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
09-Aug-2025	<20.0	23.47	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
18-Aug-2025	<20.0	14.42	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
19-Aug-2025	<20.0	20.63	<0.1	<1.0	<1.0	0.2	BQL(QL=0.7)	BQL
25-Aug-2025	<20.0	13.85	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
26-Aug-2025	<20.0	18.93	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
Standard	400 (24hours)	180 (hour)	1.0 (24hour s)	6.0 (Annual)	20 Annual)	02 (8 hours)	01(annual)	05(ann ual)

J. H. Hanant
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J. H. Hanant



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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Lakhanpur

Project	LBL OCP							
Monitoring Station	Ardhapara Village South East 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)	($\mu\text{g}/\text{m}^3$)
01-Aug-2025	<20.0	14.70	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
02-Aug-2025	<20.0	22.90	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
08-Aug-2025	<20.0	18.65	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
09-Aug-2025	<20.0	15.55	<0.1	<1.0	<1.0	0.2	BQL(QL=0.7)	BQL
18-Aug-2025	<20.0	22.33	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
19-Aug-2025	<20.0	23.18	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
25-Aug-2025	<20.0	12.15	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
26-Aug-2025	<20.0	13.00	<0.1	<1.0	<1.0	0.4	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)

T. K. S. S. S.
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J. S. S.

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Project	LBL OCP
Monitoring Station	Kirulbal Village
Date of sampling	Carbon Monoxide (CO)
	mg/m³
07-Aug-2025	0.6
22-Aug-2025	0.8
Standard	02(8 Hours)

Project	LBL OCP
Monitoring Station	Lilari Magazine House
Date of sampling	Carbon Monoxide (CO)
	mg/m³
07-Aug-2025	0.8
22-Aug-2025	0.5
Standard	02(8 Hours)

Project	LBL OCP
Monitoring Station	BOCM Workshop
Date of sampling	Carbon Monoxide (CO)
	mg/m³
07-Aug-2025	0.7
22-Aug-2025	0.9
Standard	02(8 Hours)

Project	LBL OCP
Monitoring Station	West of Lakhanpur Quarry Near Solada
Date of sampling	Carbon Monoxide (CO)
	mg/m³
07-Aug-2025	0.6
22-Aug-2025	0.7
Standard	02(8 Hours)


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NOISE LEVEL MONITORING DATA

AREA :

Lakhanpur

PROJECT :

LBL OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
05-Aug-25	Ranada Village South of Mine	49.3	42.5
05-Aug-25	Kadam Rehab Centre East of Mine	49.6	40.4
05-Aug-25	Near Lilari Magazine House	50.7	42.8
05-Aug-25	Bartap Village North West of Mine	49.2	42.6
05-Aug-25	Kirulbal Village	49.3	40.6
05-Aug-25	Barihapali Village South West of Mine	51.7	39.3
05-Aug-25	Lakhanpur Police Station West of Mine	52.3	42.8
05-Aug-25	West of Lakhanpur Quarry Near Solada	50.2	42.7
05-Aug-25	Ardhapara Village South East of Mine	50.6	40.8
05-Aug-25	Gumadera Village North of Mine	51.8	39.6
05-Aug-25	BOCM Workshop	52.4	40.1
21-Aug-25	BOCM Workshop	52.7	42.3
21-Aug-25	Kirulbal Village	51.2	40.7
21-Aug-25	Ramada Village South of Mine	49.1	42.5
21-Aug-25	Kadam Rehab Centre East of Mine	52.9	41.6
21-Aug-25	West of Lakhanpur Quarry Near Solada	50.2	39.8
21-Aug-25	Ardhapara Village South East of Mine	52.8	41.3
21-Aug-25	Near Lilari Magazine House	54.4	44.6
21-Aug-25	Barihapali Village South West of Mine	52.7	41.4
21-Aug-25	Gumadera Village North of Mine	51.4	40.7
21-Aug-25	Lakhanpur Police Station West of Mine	50.6	42.8
21-Aug-25	Bartap Village North West of Mine	50.4	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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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
14-Aug-25	Inlet of Secondary Sedimentation Tank, Lakhanpur	7.03	<4.0	28	20	-	-	-	
14-Aug-25	Mine Sump Water, Lakhanpur	6.43	<4.0	17	8	-	-	-	
14-Aug-25	Outlet of ETP, Lakhanpur	7.16	<4.0	20	16	-	-	-	
14-Aug-25	Inlet of ETP, Lakhanpur	6.67	<4.0	24	28	-	-	-	
14-Aug-25	Inlet of ETP, Belpahar	6.77	<4.0	36	28	-	-	-	
14-Aug-25	Mine Sump Water, Lilari	5.81	<4.0	20	16	-	-	-	
14-Aug-25	Outlet of ETP, Belpahar	7.13	<4.0	18	12	-	-	-	
14-Aug-25	Outlet of Secondary Sedimentation Tank, Lakhanpur	6.91	<4.0	22	16	-	-	-	
14-Aug-25	ECO Tank, Belpahar	6.73	<4.0	29	36	-	-	-	
14-Aug-25	Inlet of MDTP, Belpahar	6.69	<4.0	32	28	-	-	-	
14-Aug-25	Clear Water Tank of MDTP, Belpahar	6.76	<4.0	19	24	-	-	-	
14-Aug-25	Mine Sump Water, Belpahar	5.95	<4.0	23	12	-	-	-	
30-Aug-25	Outlet of ETP, Lakhanpur	7.17	<4.0	32	24	-	-	-	
30-Aug-25	Outlet of ETP, Belpahar	6.93	<4.0	26	20	-	-	-	
30-Aug-25	Inlet of ETP, Lakhanpur	6.70	<4.0	46	40	-	-	-	
30-Aug-25	Inlet of ETP, Belpahar	7.15	<4.0	40	32	-	-	-	

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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T. Jaisankar
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Jaisankar



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Drinking Water Quality Data Lakhanpur Area

Project / OCP	Integrated LBL OCP			Indian Drinking Standards (IS-10500):2012	
	LKP Project Office	IWSS Inlet-BIT	IWSS Outlet-BIT	Acceptable	Permissible
Monitoring Station	14-Aug-2025	14-Aug-2025	14-Aug-2025		
Date of Sampling	14-Aug-2025	14-Aug-2025	14-Aug-2025	Acceptable	Permissible
Colour(Hazen)	4	3	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	3	1	3	1	5
pH	7.15	7.22	7.24	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	54.62	46.22	37.81	200	600
Chloride(mg/L)	17.48	9.71	11.65	250	1000
Sulphate(mg/L)	32.26	27.3	24.3	200	400
Nitrate(mg/L)	<0.5	5.16	<0.5	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	86.28	47.06	54.90	200	600
Calcium(mg/L)	14.14	14.14	18.86	75	200
Fluoride(mg/L)	0.63	0.41	0.48	1	1.5
Total Dissolve Solid(mg/L)	132	107	100	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)	<0.005	<0.005	<0.005	0.003	No relaxation
Total Chromium (mg/L)	<0.01	<0.01	<0.01	0.05	No relaxation
Arsenic(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Boron(mg/L)	<0.2	<0.2	<0.2	0.5	2.4

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Drinking Water Quality Data Lakhanpur Area

Project / OCP	Integrated LBL OCP			Indian Drinking Standards (IS-10500):2012	
	LKP Project Office	IWSS Inlet-BIT	IWSS Outlet-BIT	Acceptable	Permissible
Monitoring Station	14-Aug-2025	14-Aug-2025	14-Aug-2025	Acceptable	Permissible
Date of Sampling	14-Aug-2025	14-Aug-2025	14-Aug-2025	Acceptable	Permissible
Selenium(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	6.69	6.19	6.63	-	-
Potassium(mg/L)	2.57	2.39	3.09	-	-
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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Piezometer Water Quality Data: Lakhanpur Area

Project / OCP	LBL OCP			Indian Drinking Standards (IS-10500):2012	
	Monitoring Station	MIP 08 (Village Kusraloi, inside 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	1.0	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	No relaxation
Selenium (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
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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Piezometer Water Quality Data: - Ib valley Area

Project / OCP	Lajkura MIP 02 (Jamkani Village High school (Gumadera))	Indian Drinking Standards (IS-10500):2012	
		Acceptable	Permissible
Monitoring Station			
Date of Sampling	27-May-25	5	15
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	1.0	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	No relaxation
Selenium (mg/L)	<0.005	0.01	No relaxation
Boron(mg/L)	<0.2	0.5	2.4
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	-	-

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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)	Acceptable	Permissible
Date of Sampling	29-May-25	5	15
Colour(Hazen)	2	Agreeable	Agreeable
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	1	5
Turbidity(NTU)	1	6.5-8.5	No relaxation
pH	7.63	200	600
Total Alkalinity(mg/L)	84.11	250	1000
Chloride(mg/L)	15.66	200	400
Sulphate(mg/L)	32.21	45	No relaxation
Nitrate(mg/L)	<0.50	200	600
Total Hardness (Ca CO ₃)(mg/L)	79.58	75	200
Calcium(mg/L)	20.76	1	1.5
Fluoride(mg/L)	0.42	500	2000
Total Dissolve Solid(mg/L)	162	0.05	1.5
Copper(mg/L)	<0.03	0.1	0.3
Manganese(mg/L)	<0.04	1.0	No relaxation
Iron(mg/L)	<0.1	5	15
Zinc(mg/L)	<0.04	0.01	No relaxation
Lead(mg/L)	<0.005	0.003	No relaxation
Cadmium(mg/L)	<0.001	0.05	No relaxation
Total Chromium (mg/L)	<0.01	0.01	No relaxation
Arsenic(mg/L)	<0.005	0.01	No relaxation
Selenium (mg/L)	<0.005	0.5	2.4
Boron(mg/L)	<0.2	-	-
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	-	-

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Integrated LBL OCP

Legend
Monitoring Station



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

Ib Valley Coalfield



MCL

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



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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-Aug-25	North of the Sardega Railway Siding, Kulapada	196	94	41	16.11	35.39	Mining Activities, OCP, Coal Transportation	About 500m
13-Aug-25	Body Workshop Basundhara	194	83	38	13.79	31.69		
23-Aug-25	North of the Sardega Railway Siding, Kulapada	208	109	44	14.77	25.08	Mining Activities, OCP, Coal Transportation	About 500m
23-Aug-25	Body Workshop Basundhara	196	93	41	12.37	28.57		

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MoEF Standards Notification dated 25th
September, 2000

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AIR QUALITY

Test Report

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
04-Aug-25	Sarangijharia Village	146	46	22	16.15	23.39	Domestic	About 500m
04-Aug-25	Khamarpara Village	110	42	18	15.36	29.15		
04-Aug-25	West of Coal Stock, Near Golf Course	131	43	22	14.05	28.07	Mining Activities, OCP, Transportation	About 500m
04-Aug-25	Ratansara Village	158	66	31	15.36	31.45	Transportation	About 100m
05-Aug-25	West of Coal Stock, Near Golf Course	113	35	17	15.12	33.99	Mining Activities, OCP, Transportation	About 500m
05-Aug-25	Sarangijharia Village	132	62	20	13.91	16.67	Domestic	About 500m
05-Aug-25	Ratansara Village	120	51	27	13.85	24.91	Transportation	About 100m
05-Aug-25	Khamarpara Village	117	49	22	16.05	34.48		
11-Aug-25	Ratansara Village	136	45	23	13.84	22.82	Transportation	About 100m
11-Aug-25	West of Coal Stock, Near Golf Course	129	43	23	16.11	32.18	Mining Activities, OCP, Transportation	About 500m
11-Aug-25	Sarangijharia Village	149	50	27	16.19	29.93	Domestic	About 500m
11-Aug-25	Khamarpara Village	105	36	17	14.53	21.77		
12-Aug-25	West of Coal Stock, Near Golf Course	149	55	28	14.47	28.91	Mining Activities, OCP, Transportation	About 500m
12-Aug-25	Sarangijharia Village	118	39	16	15.28	27.47	Domestic	About 500m
12-Aug-25	Khamarpara Village	136	58	25	13.84	24.20		
12-Aug-25	Ratansara Village	172	62	29	16.20	25.09	Transportation	About 100m
20-Aug-25	Sarangijharia Village	134	48	23	16.58	23.75	Domestic	About 500m
20-Aug-25	West of Coal Stock, Near Golf Course	144	54	24	17.74	31.71	Mining Activities, OCP, Transportation	About 500m
20-Aug-25	Khamarpara Village	124	47	20	20.01	33.13		
20-Aug-25	Ratansara Village	128	48	21	13.65	32.77	Transportation	About 100m
21-Aug-25	West of Coal Stock, Near Golf Course	130	47	22	13.33	33.20	Mining Activities, OCP, Transportation	About 500m
21-Aug-25	Sarangijharia Village	167	69	31	12.36	23.50	Domestic	About 500m

*NAAQS, 2009

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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
21-Aug-25	Ratansara Village	137	55	24	10.25	27.25	Transportation	About 100m
21-Aug-25	Khamarpara Village	144	56	24	10.87	23.27		
27-Aug-25	Ratansara Village	119	37	18	16.01	17.59	Transportation	About 100m
27-Aug-25	Sarangjharria Village	137	51	22	22.28	21.62	Domestic	About 500m
27-Aug-25	Khamarpara Village	130	51	22	12.60	32.09		
27-Aug-25	West of Coal Stock, Near Golf Course	157	66	28	18.73	18.29	Mining Activities, OCP, Transportation	About 500m
28-Aug-25	West of Coal Stock, Near Golf Course	108	34	15	12.50	28.06	Mining Activities, OCP, Transportation	About 500m
28-Aug-25	Khamarpara Village	112	43	17	12.01	34.83		
28-Aug-25	Sarangjharria Village	156	70	29	15.42	20.27	Domestic	About 500m
28-Aug-25	Ratansara Village	149	53	26	15.36	22.6	Transportation	About 100m


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*N/A (IS, 2009)

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Test Report

AMBIENT AIR QUALITY DATA

Area :

Mahalaxmi

(Reference Station)

Project :

Basundhara (E) OCP

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

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
04-Aug-25	Khamarpura Village (Reported Only)	110	42	18	15.36	29.15		
05-Aug-25	Khamarpura Village (Reported Only)	117	49	22	16.05	34.48		
11-Aug-25	Khamarpura Village (Reported Only)	105	36	17	14.53	21.77		
12-Aug-25	Khamarpura Village (Reported Only)	136	58	25	13.84	24.20		
20-Aug-25	Khamarpura Village (Reported Only)	124	47	20	20.01	33.13		
21-Aug-25	Khamarpura Village (Reported Only)	144	56	24	10.87	23.27		
27-Aug-25	Khamarpura Village (Reported Only)	130	51	22	12.60	32.09		
28-Aug-25	Khamarpura Village (Reported Only)	112	43	17	12.01	34.83		

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*NAAQs, 2009

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Mahalaxmi

Project	Basundhara (W) OCP							
Monitoring Station	West of Coal Stock, Near Golf Course							
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-Aug-2025	<20.0	22.33	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
05-Aug-2025	<20.0	13.87	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
11-Aug-2025	<20.0	15.28	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
12-Aug-2025	<20.0	11.49	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
20-Aug-2025	<20.0	18.73	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
21-Aug-2025	<20.0	20.19	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
27-Aug-2025	<20.0	12.62	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
28-Aug-2025	<20.0	16.38	<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: 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 (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-Aug-2025	<20.0	16.40	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
05-Aug-2025	<20.0	14.70	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
11-Aug-2025	<20.0	24.32	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
12-Aug-2025	<20.0	19.22	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
20-Aug-2025	<20.0	18.93	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
21-Aug-2025	<20.0	20.92	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
27-Aug-2025	<20.0	24.03	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
28-Aug-2025	<20.0	20.35	<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: 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)
04-Aug-2025	<20.0	11.30	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
05-Aug-2025	<20.0	18.37	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
11-Aug-2025	<20.0	18.65	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
12-Aug-2025	<20.0	19.22	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
20-Aug-2025	<20.0	24.32	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
21-Aug-2025	<20.0	22.05	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
27-Aug-2025	<20.0	22.05	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
28-Aug-2025	<20.0	14.42	<0.1	<1.0	<1.0	0.9	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	Khamarpara Village							
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-Aug-2025	<20.0	19.78	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
05-Aug-2025	<20.0	23.18	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
11-Aug-2025	<20.0	24.32	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
12-Aug-2025	<20.0	21.48	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
20-Aug-2025	<20.0	19.34	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
21-Aug-2025	<20.0	17.50	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
27-Aug-2025	<20.0	19.97	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
28-Aug-2025	<20.0	21.21	<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)

T. J. Jaisankar
Authorized Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

Jaisankar



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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Mahalaxmi

Project	Basundhara (E) OCP							
Monitoring Station	Khamarpara Village (Reported)							
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-Aug-2025	<20.0	19.78	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
05-Aug-2025	<20.0	23.18	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
11-Aug-2025	<20.0	24.32	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
12-Aug-2025	<20.0	21.48	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
20-Aug-2025	<20.0	19.34	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
21-Aug-2025	<20.0	17.50	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
27-Aug-2025	<20.0	19.97	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
28-Aug-2025	<20.0	21.21	<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)

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

J. H. H.

 सीएमपीडीआई मिनी लैब cmpdi Mini Lab	AMBIENT AIR QUALITY DATA Area: Mahalaxmi
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Project	Basundhara(W)OCP
Monitoring Station	North of the Sardega Railway Siding, Kulapada
Date of sampling	Carbon Monoxide (CO)
	mg/m³
13-Aug-2025	0.7
23-Aug-2025	0.6
Standard	02(8Hours)

Project	Basundhara(W)OCP
Monitoring Station	Body WorkshpBasundhara
Date of sampling	Carbon Monoxide (CO)
	mg/m³
13-Aug-2025	0.8
23-Aug-2025	0.7
Standard	02(8Hours)


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J. J. Tanavik



TABLE--

NOISE LEVEL MONITORING DATA

AREA : Mahalaxmi

PROJECT : Basundhara (W) OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
06-Aug-25	South-West of Working Face -Gopalpur Village,Near CMPDIL Camp	52.6	40.3
06-Aug-25	Ratansara Village	49.7	42.4
06-Aug-25	West of Coal Stock , Near Golf Course	50.7	42.4
06-Aug-25	Sarangijharia Community Centre	50.4	40.3
06-Aug-25	North of the Sardega Railway Siding ,Kulapada	52.3	42.9
22-Aug-25	South-West of Working Face -Gopalpur Village,Near CMPDIL Camp	54.4	44.5
22-Aug-25	North of the Sardega Railway Siding ,Kulapada	60.4	52.7
22-Aug-25	West of Coal Stock , Near Golf Course	52.3	41.6
22-Aug-25	Sarangijharia Community Centre	50.2	40.7
22-Aug-25	Ratansara Village	52.6	42.3

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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Jasanti



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CMPDI
CENTRAL POLLUTION CONTROL BOARD

TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Mahalaxmi

PROJECT :

Basundhara (E) OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
06-Aug-25	Quary Sump of Basundhara East OCP/ Near CHP of Basundhara East OCP	52.4	40.7
22-Aug-25	Quary Sump of Basundhara East OCP/ Near CHP of Basundhara East OCP	51.9	40.4

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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Signature



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भुवनेश्वर

TABLE-

EFFLUENT QUALITY DATA

Area :

Mahalaxmi

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

Project :

Basundhara (W) OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	TDS	DO	Remarks
14-Aug-25	Sardega Railway Siding Sedimentation Pond	6.47	<4.0	32	28	-	-	-	
14-Aug-25	Outlet of ETP at Excavation Workshop, B(W)OCP	-	-	-	-	-	-	-	Dry
14-Aug-25	Inlet to ETP at Excavation Workshop, B(W)OCP	-	-	-	-	-	-	-	Dry
14-Aug-25	Basundhara (W) OCP Mine Sump	6.93	<4.0	29	20	-	-	-	
30-Aug-25	Outlet of ETP at Excavation Workshop, B(W)OCP	-	-	-	-	-	-	-	Dry
30-Aug-25	Inlet to ETP at Excavation Workshop, B(W)OCP	-	-	-	-	-	-	-	Dry

J. Pattanayak
Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

J. Pattanayak

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 Mahalaxmi Area

Project / OCP	Basundhara (W)	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	Water Treatment Plant Clear Water Reservoir	Acceptable	Permissible
Date of Sampling	14-Aug-2025	Acceptable	Permissible
Colour(Hazen)	2	5	15
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	3	1	5
pH	6.92	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	21.01	200	600
Chloride(mg/L)	15.54	250	1000
Sulphate(mg/L)	75	200	400
Nitrate(mg/L)	16.34	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	109.81	200	600
Calcium(mg/L)	25.15	75	200
Fluoride(mg/L)	0.59	1	1.5
Total Dissolve Solid(mg/L)	206	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)	<0.005	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

Taffanai
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Drinking Water Quality Data Mahalaxmi Area

Project / OCP	Basundhara (W) Water Treatment Plant Clear Water Reservoir	Indian Drinking Standards (IS-10500):2012	
		Acceptable	Permissible
Monitoring Station			
Date of Sampling	14-Aug-2025		
Selenium(mg/L)	<0.005	0.01	No relaxation
Sodium(mg/L)	8.34		
Potassium(mg/L)	5.87		
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	-	-

Sanjay
Authorised Signatory
CMPDI, RI-VII, LAP
BHUBHAR

Sanjay



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Drinking Water Quality Data Mahalaxmi Area

Project / OCP	Basundhara (E)	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	Basundhar East Sump Quarry OCP	Acceptable	Permissible
Date of Sampling	14-Aug-2025		
Colour(Hazen)	2	5	15
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	4	1	5
pH	7.20	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	46.22	200	600
Chloride(mg/L)	13.60	250	1000
Sulphate(mg/L)	92.5	200	400
Nitrate(mg/L)	12.26	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	152.95	200	600
Calcium(mg/L)	29.86	75	200
Fluoride(mg/L)	0.76	1	1.5
Total Dissolve Solid(mg/L)	233	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)	<0.005	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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Drinking Water Quality Data Mahalaxmi Area

Project / OCP	Basundhara (E)	Indian Drinking Standards (IS-10500):2012	
	Basundhar East Sump Quarry OCP	Acceptable	Permissible
Monitoring Station			
Date of Sampling	14-Aug-2025		
Selenium(mg/L)	<0.005	0.01	No relaxation
Sodium(mg/L)	8.31		
Potassium(mg/L)	7.02		
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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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 Sardegga Primary School)		
Date of Sampling	28-May-25	28-May-25	28-May-25	Acceptable	Permissible
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	1.0	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	No relaxation
Selenium (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
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	-	-

K. Pattanayak
Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

Jasmati

Basundhara (W) OCP

Sarangjharla Village

Legend

● Air Monitoring Locations

North of the Sardega Railway Siding, Karapada

Khamarpara, East Side of Sardega Railway Siding

West of Coal Stock, Near Golf Course

Ratanasara Village

Google Earth

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

Ib Valley Coalfield



Mahanadi Coalfields Limited



cmpdi

A Mini Ratan Company

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-Aug-25	Lalkera Railway Siding	194	93	40	12.99	38.68		
13-Aug-25	Kulda PO Office	224	112	45	11.69	21.51		
23-Aug-25	Lalkera Railway Siding	202	105	41	12.99	17.58		
23-Aug-25	Kulda PO Office	185	93	38	11.69	17.97		

MoEF Standards Notification dated 25th September, 2000

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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
04-Aug-25	North of CHP, Teleimal	157	61	26	11.09	18.82	Domestic, OCP, Transportation	About 500m
04-Aug-25	Bilaimunda Village	136	56	27	16.05	36.08	Village Road	About 500m
04-Aug-25	South West of Working Face, Chakarpur	129	47	21	13.85	26.99	Village Road	About 500m
04-Aug-25	External CT Road, Barpali	127	45	22	17.13	23.96	Mining Activities, Coal Transportation	About 500m
05-Aug-25	South West of Working Face, Chakarpur	125	36	17	14.49	33.29	Village Road	About 500m
05-Aug-25	North of CHP, Teleimal	130	42	17	15.21	22.03	Domestic, OCP, Transportation	About 500m
05-Aug-25	External CT Road, Barpali	146	60	28	14.55	24.71	Mining Activities, Coal Transportation	About 500m
05-Aug-25	Bilaimunda Village	124	49	22	16.05	36.88	Village Road	About 500m
11-Aug-25	External CT Road, Barpali	136	54	26	16.11	20.11	Mining Activities, Coal Transportation	About 500m
11-Aug-25	South West of Working Face, Chakarpur	138	51	24	16.20	29.13	Village Road	About 500m
11-Aug-25	North of CHP, Teleimal	133	57	22	15.36	32.23	Domestic, OCP, Transportation	About 500m
11-Aug-25	Bilaimunda Village	159	67	28	16.11	37.00	Village Road	About 500m
12-Aug-25	South West of Working Face, Chakarpur	144	55	26	14.57	17.46	Village Road	About 500m
12-Aug-25	North of CHP, Teleimal	115	48	19	13.81	19.31	Domestic, OCP, Transportation	About 500m
12-Aug-25	Bilaimunda Village	137	53	21	13.80	24.12	Village Road	About 500m
12-Aug-25	External CT Road, Barpali	110	39	18	14.53	17.42	Mining Activities, Coal Transportation	About 500m
20-Aug-25	North of CHP, Teleimal	117	39	16	11.09	30.65	Domestic, OCP, Transportation	About 500m
20-Aug-25	South West of Working Face, Chakarpur	110	38	16	15.50	19.94	Village Road	About 500m
20-Aug-25	Bilaimunda Village	125	51	20	9.94	24.56	Village Road	About 500m
20-Aug-25	External CT Road, Barpali	135	56	23	19.79	37.23	Mining Activities, Coal Transportation	About 500m
21-Aug-25	South West of Working Face, Chakarpur	150	62	28	11.67	19.06	Village Road	About 500m
21-Aug-25	External CT Road, Barpali	164	78	31	19.45	22.87	Mining Activities, Coal Transportation	About 500m

*N44QS,2009

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Janak

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
21-Aug-25	Bilaimunda Village	113	36	17	11.59	20.44	Village Road	About 500m
21-Aug-25	North of CHP, Teleimal	122	44	20	15.92	30.41	Domestic, OCP, Transportation	About 500m
27-Aug-25	External CT Road, Barpali	30	48	21	16.11	14.86	127	About 500m
27-Aug-25	North of CHP, Teleimal	141	58	23	18.58	20.28	Domestic, OCP, Transportation	About 500m
27-Aug-25	Bilaimunda Village	137	52	23	15.46	22.28	Village Road	About 500m
27-Aug-25	South West of Working Face, Chakarpur	135	53	24	17.82	32.05	Village Road	About 500m
28-Aug-25	External CT Road, Barpali	131	44	20	17.81	33.61	Mining Activities, Coal Transportation	About 500m
28-Aug-25	South West of Working Face, Chakarpur	126	48	21	12.79	24.23	Village Road	About 500m
28-Aug-25	Bilaimunda Village	147	56	25	15.92	20.27	Village Road	About 500m
28-Aug-25	North of CHP, Teleimal	153	62	28	14.15	18.78	Domestic, OCP, Transportation	About 500m

*N.4.05, 2009

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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-Aug-25	Karlikachar Village	183	74	36	13.73	28.12	External Coal Transportation Road	About 500m
13-Aug-25	KAN-1 Near Coal Sampling Lab	198	81	39	13.73	20.58	Railway Siding, Transportation	About 500m
13-Aug-25	Garjanbahal Village	208	95	40	15.87	33.30	External Coal Transportation Road	About 500m
23-Aug-25	Karlikachar Village	203	111	44	12.00	31.69	External Coal Transportation Road	About 500m
23-Aug-25	KAN-1 Near Coal Sampling Lab	185	87	38	21.83	39.79	Railway Siding, Transportation	About 500m
23-Aug-25	Garjanbahal Village	220	113	47	20.60	31.40	External Coal Transportation Road	About 500m

MoEF Standards Notification dated 25th September, 2000

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 ଭୁବନେଶ୍ୱର

Test Report

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
04-Aug-25	West of working face, Bihaimunda	125	36	19	16.20	21.85	South-West of Working Face	About 500m
04-Aug-25	South-East of Working Face, Kutabaga Village	128	42	19	15.21	24.31	South-East of Working Face	About 1000m
05-Aug-25	South-East of Working Face, Kutabaga Village	122	53	17	13.87	24.95	South-East of Working Face	About 1000m
05-Aug-25	West of working face, Bihaimunda	137	53	24	14.55	26.89	South-West of Working Face	About 500m
11-Aug-25	West of working face, Bihaimunda	126	44	20	15.30	22.93	South-West of Working Face	About 500m
11-Aug-25	South-East of Working Face, Kutabaga Village	134	64	25	16.18	21.01	South-East of Working Face	About 1000m
12-Aug-25	South-East of Working Face, Kutabaga Village	153	71	28	13.67	21.17	South-East of Working Face	About 1000m
12-Aug-25	West of working face, Bihaimunda	152	47	23	14.47	27.46	South-West of Working Face	About 500m
20-Aug-25	West of working face, Bihaimunda	147	62	26	14.93	26.20	South-West of Working Face	About 500m
20-Aug-25	South-East of Working Face, Kutabaga Village	152	56	27	16.79	32.47	South-East of Working Face	About 1000m
21-Aug-25	South-East of Working Face, Kutabaga Village	113	34	16	17.81	33.27	South-East of Working Face	About 1000m
21-Aug-25	West of working face, Bihaimunda	166	67	29	19.87	24.11	South-West of Working Face	About 500m
27-Aug-25	South-East of Working Face, Kutabaga Village	127	51	20	12.71	31.19	South-East of Working Face	About 1000m
27-Aug-25	West of working face, Bihaimunda	138	49	22	15.08	26.37	South-West of Working Face	About 500m
28-Aug-25	West of working face, Bihaimunda	143	52	25	11.46	27.57	South-West of Working Face	About 500m
28-Aug-25	South-East of Working Face, Kutabaga Village	119	38	17	12.69	16.52	South-East of Working Face	About 1000m

*N.L.Q.S.2009

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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 (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-Aug-2025	<20.0	21.77	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
05-Aug-2025	<20.0	13.00	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
11-Aug-2025	<20.0	18.93	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
12-Aug-2025	<20.0	19.50	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
20-Aug-2025	<20.0	17.82	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
21-Aug-2025	<20.0	16.68	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
27-Aug-2025	<20.0	12.15	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
28-Aug-2025	<20.0	20.92	<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: Basundhara

Project	Kulda OCP							
Monitoring Station	South West of Working Face, Chakarpur							
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-Aug-2025	<20.0	16.68	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
05-Aug-2025	<20.0	23.18	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
11-Aug-2025	<20.0	12.43	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
12-Aug-2025	<20.0	14.13	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
20-Aug-2025	<20.0	23.47	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
21-Aug-2025	<20.0	17.53	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
27-Aug-2025	<20.0	19.50	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
28-Aug-2025	<20.0	20.92	<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	North of CHP, Teleimal							
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-Aug-2025	<20.0	19.22	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
05-Aug-2025	<20.0	18.93	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
11-Aug-2025	<20.0	16.97	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
12-Aug-2025	<20.0	21.48	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
20-Aug-2025	<20.0	21.48	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
21-Aug-2025	<20.0	16.97	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
27-Aug-2025	<20.0	12.15	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
28-Aug-2025	<20.0	17.25	<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

Kulda OCP								
Project	External CT Road, Barpali							
Monitoring Station	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (a) Pyrene	Benzene
Date of sampling	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)	(mg/m^3)	(ng/m^3)	($\mu\text{g}/\text{m}^3$)
04-Aug-2025	<20.0	22.37	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
05-Aug-2025	<20.0	18.53	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
11-Aug-2025	<20.0	11.64	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
12-Aug-2025	<20.0	20.49	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
20-Aug-2025	<20.0	16.73	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
21-Aug-2025	<20.0	14.82	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
27-Aug-2025	<20.0	10.92	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
28-Aug-2025	<20.0	17.24	<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: 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 (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-Aug-2025	<20.0	22.62	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BQL
05-Aug-2025	<20.0	13.28	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
11-Aug-2025	<20.0	12.72	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
12-Aug-2025	<20.0	20.92	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
20-Aug-2025	<20.0	20.92	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
21-Aug-2025	<20.0	24.32	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
27-Aug-2025	<20.0	23.18	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
28-Aug-2025	<20.0	20.35	<0.1	<1.0	<1.0	1.0	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)

T. K. Tawari
Authorised Signatory
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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) ($\mu\text{g}/\text{m}^3$)	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-Aug-2025	<20.0	13.85	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
05-Aug-2025	<20.0	15.55	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
11-Aug-2025	<20.0	22.62	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
12-Aug-2025	<20.0	24.32	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
20-Aug-2025	<20.0	20.83	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
21-Aug-2025	<20.0	17.54	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
27-Aug-2025	<20.0	12.55	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
28-Aug-2025	<20.0	15.94	<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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संरक्षण बोर्ड
CMPDI
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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
06-Aug-25	Kulda PO Office	59.8	53.6
06-Aug-25	South West of Working Face Chakarpur	52.8	42.6
06-Aug-25	Laikera Railway Siding	49.6	42.3
22-Aug-25	Kulda PO Office	53.8	43.5
22-Aug-25	South West of Working Face Chakarpur	49.3	40.6
22-Aug-25	Laikera Railway Siding	52.7	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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CENTRAL POLLUTION CONTROL BOARD

TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Basundhara

PROJECT :

Garjhanbahal OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
06-Aug-25	Garjhanbahal Village	49.3	39.8
06-Aug-25	Karikachar Village	50.17	41.4
22-Aug-25	Karikachar Village	51.8	42.4
22-Aug-25	Garjhanbahal Village	53.6	43.5

MoEF Standard Notification dated 25th September, 2009	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, 2009	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, 2009	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, 2009	6.00 AM - 10.00 PM Leq 50dB(A) (Silence Zone)	10.00 PM - 6.00 AM Leq 40dB(A) (Silence Zone)

Intikrishna
Authorized Signatory,
CMPDI, RI-VII, LAB
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Jaswant



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TABLE--

EFFLUENT QUALITY DATA

Area :

Basundhara

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

Project :

Kulda OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	TDS	DO	Remarks
14-Aug-25	Final Outlet Of ETP	7.31	<4.0	13	8	-	-	-	
14-Aug-25	Inlet of ETP	7.44	<4.0	19	12	-	-	-	
14-Aug-25	Mine Sump Water Near Kulda Nursery	7.20	<4.0	23	16	-	-	-	
30-Aug-25	Final Outlet Of ETP	7.29	<4.0	18	16	-	-	-	
30-Aug-25	Inlet of ETP	7.17	<4.0	23	20	-	-	-	

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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भारत सरकार

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
14-Aug-25	Mine Sump Water	7.10	<4.0	21	16	-	-	-	
14-Aug-25	Inlet of Settling Tank (Kanika Siding)	6.54	<4.0	33	40	-	-	-	
14-Aug-25	Outlet of Settling Tank (Kanika Siding)	7.07	<4.0	27	32	-	-	-	
30-Aug-25	Inlet of Settling Tank (Kanika Siding)	6.81	<4.0	52	44	-	-	-	
30-Aug-25	Mine Sump Water	7.35	<4.0	35	28	-	-	-	
30-Aug-25	Outlet of Settling Tank (Kanika Siding)	6.70	<4.0	41	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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Drinking Water Quality Data Basundhara Area

Project / OCP	Kulda OCP		Indian Drinking Standards (IS-10500):2012	
	Well at Sahaspur	Well at Teleimal	Acceptable	Permissible
Monitoring Station				
Date of Sampling	14-Aug-2025	14-Aug-2025		
Colour(Hazen)	1	3	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	1	2	1	5
pH	6.96	6.58	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	117.65	130.26	200	600
Chloride(mg/L)	104.92	29.14	250	1000
Sulphate(mg/L)	25.69	72.38	200	400
Nitrate(mg/L)	18.26	40.85	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	192.17	196.10	200	600
Calcium(mg/L)	53.44	58.16	75	200
Fluoride(mg/L)	0.83	0.68	1	1.5
Total Dissolve Solid(mg/L)	328	367	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)	0.07	0.13	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 Basundhara Area

Project / OCP	Kulda OCP		Indian Drinking Standards (IS-10500):2012	
	Well at Sahaspur	Well at Teleimal	Acceptable	Permissible
Monitoring Station				
Date of Sampling	14-Aug-2025	14-Aug-2025		
Selenium(mg/L)	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	5.99	7.72		
Potassium(mg/L)	2.37	12.52		
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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Drinking Water Quality Data Basundhara Area

Project / OCP	Garjanbahal OCP		Indian Drinking Standards (IS-10500):2012	
	Well at Garjanbahal Village	South West of Coalface, Bihaimunda	Acceptable	Permissible
Monitoring Station				
Date of Sampling	14-Aug-2025	14-Aug-2025	5	15
Colour(Hazen)	3	2	Agreeable	Agreeable
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	4	3	1	5
pH	7.04	7.77	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	33.61	168.08	200	600
Chloride(mg/L)	23.31	60.23	250	1000
Sulphate(mg/L)	7.8	51	200	400
Nitrate(mg/L)	2.05	9.13	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	39.22	184.33	200	600
Calcium(mg/L)	11.0	44.01	75	200
Fluoride(mg/L)	0.37	0.81	1	1.5
Total Dissolve Solid(mg/L)	93	365	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 Basundhara Area

Project / OCP	Garjanbahal OCP		Indian Drinking Standards (IS-10500):2012	
	Well at Garjanbahal Village	South West of Coalface, Bihai munda		
Monitoring Station				
Date of Sampling	14-Aug-2025	14-Aug-2025	Acceptable	Permissible
Selenium(mg/L)	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	7.05	5.96		
Potassium(mg/L)	1.29	2.72		
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: Basundhara Area

Project / OCP	Kulda		Indian Drinking Standards (IS-10500):2012	
	Monitoring Station	MIP 11 (Kartikachar, Infront of Primary School)	MIP 12 (Balinga Village, Infront of Office)	Acceptable
Date of Sampling	29-May-25	29-May-25	5	15
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	1.0	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
Selenium (mg/L)	<0.005	<0.005	0.01	No relaxation
Boron(mg/L)	<0.2	<0.2	0.5	2.4
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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format

Garjanbahal OCP

Legend
Monitoring Station



Google Earth

Kulda OCP

Legend
Air Monitoring Locations

North of CHP, Teleimal

External CT Road, Barpali

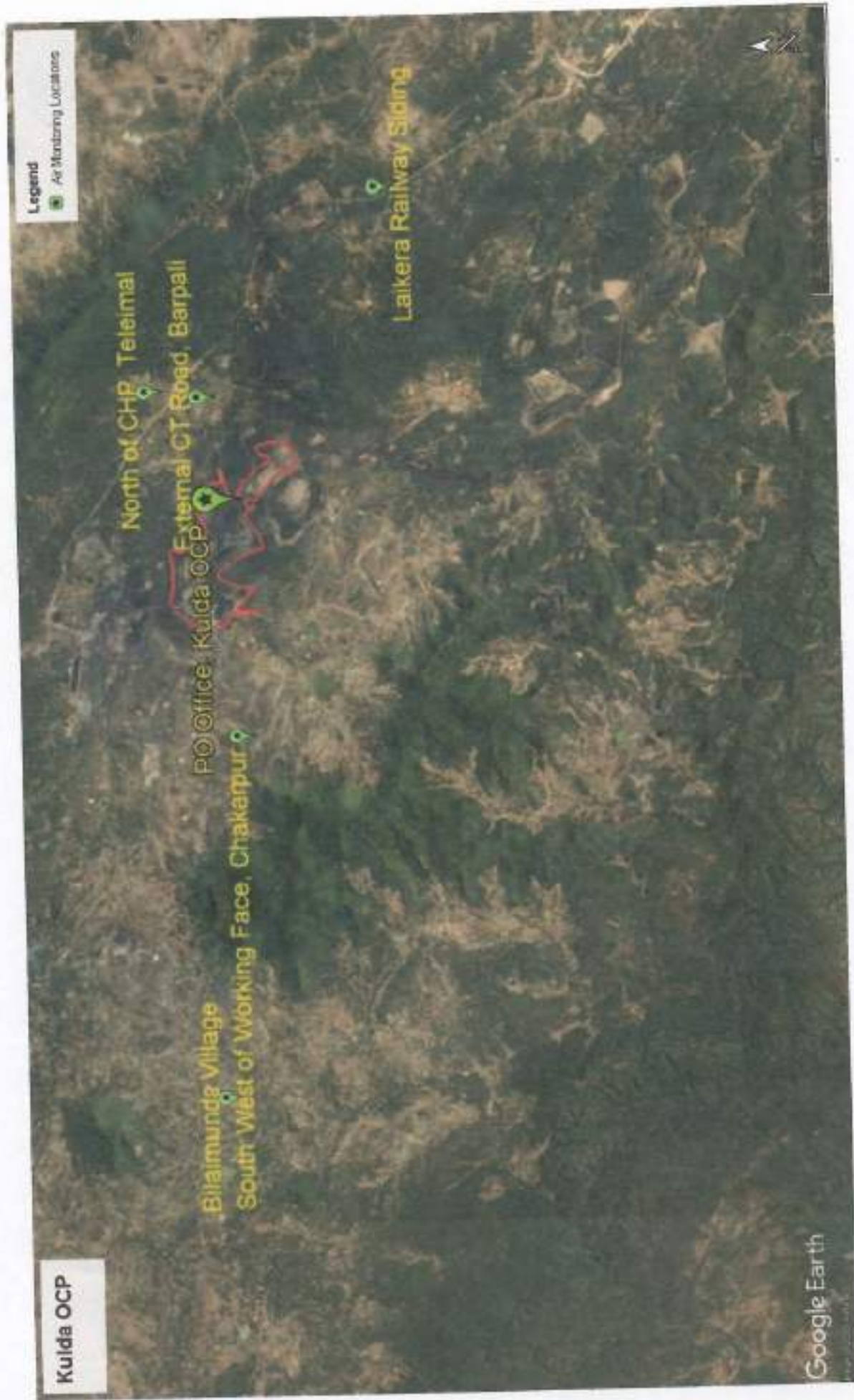
PO Office, Kulda OCP

Bilaimunda Village

South West of Working Face, Chakaripur

Laikera Railway Siding

Google Earth



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

Ib Valley Coalfield



Mahanadi Coalfields Limited



cmpdi

A Mini Ratna Company

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

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

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 AIR QUALITY

Test Report

AMBIENT AIR QUALITY DATA

Area :

Orient

(Compliance Station)

Project :

Orient Mine No. 1 & 2

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

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source	Distance from DGS
14-Aug-25	Orient Mine No. 1 & 2	209	103	44	16.35	31.04	Coal Stock Yard, Surface Bunker, Coal	About 250m
29-Aug-25	Orient Mine No. 1 & 2	193	89	41	10.98	16.50	Coal Stock Yard, Surface Bunker, Coal	About 250m

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MoEF Standards Notification dated 25th
 September, 2008

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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
01-Aug-25	Orient GM Office	129	46	20	13.19	23.71	Domestic and other Anthropogenic Activities	
02-Aug-25	Orient GM Office	111	41	18	16.13	20.14	Domestic and other Anthropogenic Activities	
08-Aug-25	Orient GM Office	164	70	29	13.30	16.61	Domestic and other Anthropogenic Activities	
09-Aug-25	Orient GM Office	155	59	23	16.42	31.98	Domestic and other Anthropogenic Activities	
18-Aug-25	Orient GM Office	149	67	28	18.42	23.24	Domestic and other Anthropogenic Activities	
19-Aug-25	Orient GM Office	140	49	24	13.83	24.30	Domestic and other Anthropogenic Activities	
25-Aug-25	Orient GM Office	133	47	21	17.36	24.20	Domestic and other Anthropogenic Activities	
26-Aug-25	Orient GM Office	155	73	31	13.38	30.29	Domestic and other Anthropogenic Activities	


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 J. Prasad

*NAQS, 2009

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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-Aug-25	Orient Mine No. 3	194	93	41	14.33	20.75	Coal Stockyard, Surface Bunker, Coal	About 200m
29-Aug-25	Orient Mine No. 3	206	105	44	14.01	15.63	Coal Stockyard, Surface Bunker, Coal	About 200m

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BHUBANESWAR

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September, 2000

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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-Aug-25	Orient Mine No. 4	183	87	39	15.30	24.46	Coal Transportation Road	About 300m
29-Aug-25	Orient Mine No. 4	180	83	38	15.96	24.10	Coal Transportation Road	About 300m

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MoEF Standards Notification dated 25th
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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-Aug-25	HBI Mine	138	44	41	13.73	29.50	Coal Stockyard, Surface Bunker, Coal Transport	About 100m
14-Aug-25	Burdia Colony Pump House	185	78	33	15.10	19.61	Coal Stockyard, Surface Bunker, Coal Transport	About 150m
29-Aug-25	HBI Mine	184	92	39	17.78	19.07	Coal Stockyard, Surface Bunker, Coal Transport	About 100m
29-Aug-25	Burdia Colony Pump House	187	87	38	12.70	27.31	Coal Stockyard, Surface Bunker, Coal Transport	About 150m


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MoEF Standards Notification dated 25th September, 2000

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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
01-Aug-25	Rampur Sub Area	133	53	25	13.79	19.29	Coal Stock And CT Road	About 1000m
01-Aug-25	Rampur Officers Guest House	131	72	23	15.20	20.50	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
02-Aug-25	Rampur Officers Guest House	110	38	16	16.09	27.32	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
02-Aug-25	Rampur Sub Area	126	52	21	15.36	33.75	Coal Stock And CT Road	About 1000m
08-Aug-25	Rampur Sub Area	135	41	23	15.36	28.40	Coal Stock And CT Road	About 1000m
08-Aug-25	Rampur Officers Guest House	141	46	25	13.79	22.73	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
09-Aug-25	Rampur Officers Guest House	12	48	20	14.33	23.62	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
09-Aug-25	Rampur Sub Area	179	72	34	13.87	16.63	Coal Stock And CT Road	About 1000m
18-Aug-25	Rampur Sub Area	145	59	26	18.07	24.85	Coal Stock And CT Road	About 1000m
18-Aug-25	Rampur Officers Guest House	146	61	27	19.51	19.39	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
19-Aug-25	Rampur Officers Guest House	137	64	25	18.85	31.26	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
19-Aug-25	Rampur Sub Area	139	57	24	10.29	15.37	Coal Stock And CT Road	About 1000m
25-Aug-25	Rampur Officers Guest House	133	49	21	10.33	34.27	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
25-Aug-25	Rampur Sub Area	145	47	25	15.74	27.61	Coal Stock And CT Road	About 1000m
26-Aug-25	Rampur Sub Area	163	74	30	19.00	24.62	Coal Stock And CT Road	About 1000m
26-Aug-25	Rampur Officers Guest House	113	44	18	18.61	21.83	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m

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

Jaisankar



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-Aug-25	Near Rampur Colliery Check Post	185	85	38	12.54	25.41		
14-Aug-25	Near CHP HRC	208	96	42	12.99	33.16		
29-Aug-25	Near Rampur Colliery Check Post	194	96	41	12.54	18.00		
29-Aug-25	Near CHP HRC	206	103	44	12.99	23.70		


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MoEF Standards Notification dated 25th September, 2000

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भारत सरकार

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
01-Aug-25	Rampur Sub Area (Reported only)	133	53	25	13.79	19.29	Coal Stock And CT Road	About 1000m
01-Aug-25	Rampur Officers Guest House (Reported only)	131	72	23	15.20	20.50	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
02-Aug-25	Rampur Officers Guest House (Reported only)	110	38	16	16.09	27.32	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
02-Aug-25	Rampur Sub Area (Reported only)	126	52	21	15.36	33.75	Coal Stock And CT Road	About 1000m
08-Aug-25	Rampur Sub Area (Reported only)	135	41	23	15.36	28.40	Coal Stock And CT Road	About 1000m
08-Aug-25	Rampur Officers Guest House (Reported only)	141	46	25	13.79	22.73	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
09-Aug-25	Rampur Officers Guest House (Reported only)	12	48	20	14.33	23.62	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
09-Aug-25	Rampur Sub Area (Reported only)	179	72	34	13.87	16.63	Coal Stock And CT Road	About 1000m
18-Aug-25	Rampur Sub Area (Reported only)	145	59	26	18.07	24.85	Coal Stock And CT Road	About 1000m
18-Aug-25	Rampur Officers Guest House (Reported only)	146	61	27	19.51	19.39	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
19-Aug-25	Rampur Officers Guest House (Reported only)	137	64	25	18.85	31.26	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
19-Aug-25	Rampur Sub Area (Reported only)	139	57	24	10.29	15.37	Coal Stock And CT Road	About 1000m
25-Aug-25	Rampur Officers Guest House (Reported only)	133	49	21	10.33	34.27	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
25-Aug-25	Rampur Sub Area (Reported only)	145	47	25	15.74	27.61	Coal Stock And CT Road	About 1000m
26-Aug-25	Rampur Sub Area (Reported only)	163	74	30	19.00	24.62	Coal Stock And CT Road	About 1000m
26-Aug-25	Rampur Officers Guest House (Reported only)	113	44	18	18.61	21.83	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m

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Jasmati

*NAAQS, 2009

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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 (a) 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)	($\mu\text{g}/\text{m}^3$)
01-Aug-2025	<20.0	16.68	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
02-Aug-2025	<20.0	14.42	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
08-Aug-2025	<20.0	23.75	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
09-Aug-2025	<20.0	14.42	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
18-Aug-2025	<20.0	18.10	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
19-Aug-2025	<20.0	13.28	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
25-Aug-2025	<20.0	15.55	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
26-Aug-2025	<20.0	15.55	<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)

K. Tanakh
Authorized Signatory
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BHUBANESWAR

Jaswal



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cmpdi
सिंघी वल

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)
04-Aug-2025	<20.0	12.36	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
05-Aug-2025	<20.0	19.85	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
11-Aug-2025	<20.0	14.88	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
12-Aug-2025	<20.0	16.32	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
20-Aug-2025	<20.0	19.68	<0.1	<1.0	<1.0	1.2	BQL(QL=0.7)	BQL
21-Aug-2025	<20.0	13.45	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
27-Aug-2025	<20.0	21.56	<0.1	<1.0	<1.0	1.1	BQL(QL=0.7)	BQL
28-Aug-2025	<20.0	12.12	<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)

S. Hanolk
Authorised Signatory
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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Orient

Project	HBH Mine							
Monitoring Station	Rampur Officers Guest House							
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)
01-Aug-2025	<20.0	14.70	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
02-Aug-2025	<20.0	22.33	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
08-Aug-2025	<20.0	16.68	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
09-Aug-2025	<20.0	24.32	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
18-Aug-2025	<20.0	21.77	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
19-Aug-2025	<20.0	23.18	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
25-Aug-2025	<20.0	14.98	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
26-Aug-2025	<20.0	20.35	<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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Signature



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Mini lab

AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Orient

Project	HBMine							
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
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)	(mg/m^3)	(ng/m^3)	($\mu\text{g}/\text{m}^3$)
01-Aug-2025	<20.0	12.72	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
02-Aug-2025	<20.0	19.50	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
08-Aug-2025	<20.0	13.57	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
09-Aug-2025	<20.0	17.25	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
18-Aug-2025	<20.0	11.58	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
19-Aug-2025	<20.0	19.50	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
25-Aug-2025	<20.0	12.43	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
26-Aug-2025	<20.0	14.70	<0.1	<1.0	<1.0	0.6	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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Jamali



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Mini Report

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 (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)	($\mu\text{g}/\text{m}^3$)
01-Aug-2025	<20.0	14.70	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
02-Aug-2025	<20.0	22.33	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
08-Aug-2025	<20.0	16.68	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
09-Aug-2025	<20.0	24.32	<0.1	<1.0	<1.0	0.8	BQL(QL=0.7)	BQL
18-Aug-2025	<20.0	21.77	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
19-Aug-2025	<20.0	23.18	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
25-Aug-2025	<20.0	14.98	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BQL
26-Aug-2025	<20.0	20.35	<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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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 (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)	($\mu\text{g}/\text{m}^3$)
01-Aug-2025	<20.0	12.72	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
02-Aug-2025	<20.0	19.50	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
08-Aug-2025	<20.0	13.57	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BQL
09-Aug-2025	<20.0	17.25	<0.1	<1.0	<1.0	1.0	BQL(QL=0.7)	BQL
18-Aug-2025	<20.0	11.58	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
19-Aug-2025	<20.0	19.50	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BQL
25-Aug-2025	<20.0	12.43	<0.1	<1.0	<1.0	0.9	BQL(QL=0.7)	BQL
26-Aug-2025	<20.0	14.70	<0.1	<1.0	<1.0	0.6	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)

Katowal
Authorised Signatory
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BHUBANESWAR

Januati



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cmpdi
New Delhi

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
04-Aug-25	Orient Mine No. 1 & 2	52.5	42.2
04-Aug-25	VIP Guest House, IB Valley (Reported Only)	49.2	40.8
20-Aug-25	VIP Guest House, IB Valley (Reported Only)	50.5	41.2
23-Aug-25	Orient Mine No. 1 & 2	52.7	41.4

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 :

Orient Mine No.3

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
04-Aug-25	Orient Mine No.3	52.7	39.5
23-Aug-25	Orient Mine No.3	50.2	40.6

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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
04-Aug-25	Orient Mine No.4	49.3	42.9
23-Aug-25	Orient Mine No.4	52.6	41.8

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)

Tattwark
 Authorized Signatory
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 BHUBANESWAR

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TABLE-

NOISE LEVEL MONITORING DATA

AREA :

Orient

PROJECT :

HBMine

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
04-Aug-25	HBI Mine	51.4	40.1
04-Aug-25	Bundia Colony Pump House	52.8	39.6
04-Aug-25	Rampur Officer's Guest House	49.2	41.0
04-Aug-25	Rampur Sub Area (Reported)	51.7	40.6
20-Aug-25	Rampur Sub Area (Reported)	52.1	42.3
23-Aug-25	Bundia Colony Pump House	52.7	41.6
23-Aug-25	HBI Mine	60.9	54.3
23-Aug-25	Rampur Officer's Guest House	50.3	39.7

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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भारत सरकार

TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Orient

PROJECT :

HRC

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
04-Aug-25	Near CHP HRC	52.7	40.3
04-Aug-25	Near Rampur Colliery Check Post	49.4	42.8
23-Aug-25	Near CHP HRC	49.8	42.4
23-Aug-25	Near Rampur Colliery Check Post	51.7	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 :

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
14-Aug-25	Mine Sump of Mine No. 2	7.01	<4.0	23	20	-	-	-	

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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Hattarai
Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

Jamali



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 CMPDI
 1986-1987

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
14-Aug-25	Mine Sump of Mine No. 3	6.66	<4.0	17	12	-	-	-	
30-Aug-25	Mine Sump of Mine No. 3	7.17	<4.0	27	32	-	-	-	

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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Janaki

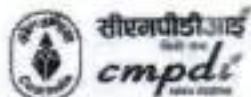


TABLE--

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
14-Aug-25	Mine Sump of Mine No. 4	6.44	<4.0	22	32	-	-	-	

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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K. K. Mishra
Authorised Signatory
CMPDI, RI-VII, LAB
BUDAUNGA

Jasrat



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RI-VII
CMPDI
LAB

TABLE--

EFFLUENT QUALITY DATA

Area :

Orient

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

Project :

HBM Mine

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	TDS	DO	Remarks
14-Aug-25	Mine Sump of HBM	6.68	<4.0	33	28	-	-	-	

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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Signature

Signature

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मिनी भद्रपुर

Drinking Water Quality Data Orient Area

Project / OCP	Orient Mine No. 1 & 2		Indian Drinking Standards (IS-10500):2012	
	Budhijaam Colony	Mine no 1 & 2 Filter Plant	Acceptable	Permissible
Monitoring Station	14-Aug-2025	14-Aug-2025		
Date of Sampling	14-Aug-2025	14-Aug-2025		
Colour(Hazen)	1	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	3	1	5
pH	7.66	6.98	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	100.84	155.47	200	600
Chloride(mg/L)	29.14	36.91	250	1000
Sulphate(mg/L)	17.76	54.05	200	400
Nitrate(mg/L)	<0.5	<0.5	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	82.36	78.44	200	600
Calcium(mg/L)	17.29	26.72	75	200
Fluoride(mg/L)	0.53	0.42	1	1.5
Total Dissolve Solid(mg/L)	196	230	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)	0.03	0.11	5	15
Lead(mg/L)	<0.005	<0.005	0.01	No relaxation
Cadmium(mg/L)	<0.005	<0.005	0.003	No relaxation
Total Chromium (mg/L)	<0.01	<0.01	0.05	No relaxation
Arsenic(mg/L)	<0.005	<0.005	0.01	No relaxation
Boron(mg/L)	<0.2	<0.2	0.5	2.4

K. Prakash
Authorised Signatory
CMPDI, RI-VII, LAB
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Janaki



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CMPDI
Mini Ratna

Drinking Water Quality Data Orient Area

Project / OCP	Orient Mine No. 1 & 2		Indian Drinking Standards (IS-10500):2012	
	Budhijaam Colony	Mine no 1 & 2 Filter Plant	Acceptable	Permissible
Monitoring Station	14-Aug-2025	14-Aug-2025		
Date of Sampling	14-Aug-2025	14-Aug-2025	Acceptable	Permissible
Selenium(mg/L)	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	18.40	21.46		
Potassium(mg/L)	8.53	7.23		
Phenolics(mg/L)	<0.001	<0.001	0.001	0.002
Residual Free Chlorine(mg/L)	<0.2	<0.2	0.2	1
MPN (Index/100 ml)	Not Detected	Not Detected	-	-


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Drinking Water Quality Data Orient Area

Project / OCP	Orient Mine No. 3	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	Mine no 3 Filter Plant	Acceptable	Permissible
Date of Sampling	14-Aug-2025	Acceptable	Permissible
Colour(Hazen)	2	5	15
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	4	1	5
pH	7.35	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	71.43	200	600
Chloride(mg/L)	21.37	250	1000
Sulphate(mg/L)	65.2	200	400
Nitrate(mg/L)	<0.5	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	117.66	200	600
Calcium(mg/L)	15.72	75	200
Fluoride(mg/L)	0.65	1	1.5
Total Dissolve Solid(mg/L)	206	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)	<0.005	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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Drinking Water Quality Data Orient Area

Project / OCP	Orient Mine No. 3	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	Mine no 3 Filter Plant	Acceptable	Permissible
Date of Sampling	14-Aug-2025		
Selenium(mg/L)	<0.005	0.01	No relaxation
Sodium(mg/L)	8.84		
Potassium(mg/L)	12.04		
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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Water Quality

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	14-Aug-2025	14-Aug-2025		
Date of Sampling	14-Aug-2025	14-Aug-2025	Acceptable	Permissible
Colour(Hazen)	2	3	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	3	2	1	5
pH	7.73	7.54	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	155.47	138.66	200	600
Chloride(mg/L)	25.25	29.14	250	1000
Sulphate(mg/L)	22.65	18.68	200	400
Nitrate(mg/L)	<0.5	<0.5	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	94.12	86.28	200	600
Calcium(mg/L)	26.72	22.0	75	200
Fluoride(mg/L)	0.34	0.42	1	1.5
Total Dissolve Solid(mg/L)	190	205	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)	<0.005	<0.005	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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BHUBANESWAR

Jaswal



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Mini Ratna

Drinking Water Quality Data Orient Area

Project / OCP	HBMMine		Indian Drinking Standards (IS-10500):2012	
	Rampur Colony	HBI Water Filter Plant	Acceptable	Permissible
Monitoring Station				
Date of Sampling	14-Aug-2025	14-Aug-2025	Acceptable	Permissible
Selenium(mg/L)	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	8.14	15.71	-	-
Potassium(mg/L)	11.32	8.03	-	-
Phenolics(mg/L)	<0.001	<0.001	0.001	0.002
Residual Free Chlorine(mg/L)	<0.2	<0.2	0.2	1
MPN (Index/100 ml)	Not Detected	Not Detected	-	-

K. S. Saitanik
Authorized Signatory
CMPDI, RI-VII, LAB
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Piezometer Water Quality Data: Orient Area

Project / OCP	Orient Mine No. 1 & 2	Indian Drinking Standards (IS-10500):2012	
		Acceptable	Permissible
Monitoring Station	MIP 03 (Beside IB Valley GM Office)		
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	1.0	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
Selenium (mg/L)	<0.005	0.01	No relaxation
Boron(mg/L)	<0.2	0.5	2.4
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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Jamali

Orient UG Mines

- Orient Mine No. 1 & 3
- Orient Mine No. 3
- Orient Mine No. 4
- HBI Mine
- HRC UG Mine

Legend

- Air Monitoring Locations

Orient Mine No. 4

Orient GM Office

Orient Mine No. 3

VIP Guest House IB Valley

Orient Mine No. 1 & 2

Near Rampur Colliery Check Post
Near GHP HRC

Rampur Sub Area Rampur Officers Guest House

Bundia Colony Pump House

HBI Mine

Orient UG Mines

- Orient Mine No. 1 & 2
- Orient Mine No. 3
- Orient Mine No. 4
- HBI Mine
- HRC UG Mine

Orient Mine No. 4

Orient GM Office

Orient Mine No. 3

VIP Guest House, IB Valley

Orient Mine No. 1 & 2

Near Rampur Colliery Check Post
Near CHP HRC

Rampur Sub Area Rampur Officers Guest House

Bundla Colony Pump House

HBI Mine

Legend

- Air Monitoring Locations

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

IB Valley Coalfield



Mahanadi Coalfields Limited



cmpdi

A Mini Ratna Company

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	
	DAV School (Anand vihar)	Corporate Office (Jagruti Vihar)	Acceptable	Permissible
Date of Sampling	14-Aug-2025	14-Aug-2025		
Colour(Hazen)	2	3	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	3	1	1	5
pH	7.65	7.67	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	42.01	71.43	200	600
Chloride(mg/L)	19.43	11.65	250	1000
Sulphate(mg/L)	12.26	6.80	200	400
Nitrate(mg/L)	<0.5	<0.5	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	58.83	50.98	200	600
Calcium(mg/L)	18.86	15.72	75	200
Fluoride(mg/L)	0.55	0.36	1	1.5
Total Dissolve Solid(mg/L)	112	110	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	<0.1	5	15
Lead(mg/L)	<0.005	<0.005	0.01	No relaxation
Cadmium(mg/L)	<0.005	<0.005	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

Tattana
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Janab



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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-Aug-2025	14-Aug-2025		
Selenium(mg/L)	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	5.77	6.49		
Potassium(mg/L)	2.16	2.92		
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	-	-

Jitendra
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Jasmat



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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)		
Monitoring Station				
Date of Sampling	14-Aug-2025	14-Aug-2025	Acceptable	Permissible
Colour(Hazen)	3	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	3	2	1	5
pH	6.34	7.49	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	96.64	67.23	200	600
Chloride(mg/L)	19.43	15.54	250	1000
Sulphate(mg/L)	8.42	11.10	200	400
Nitrate(mg/L)	13.75	20.71	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	66.67	54.90	200	600
Calcium(mg/L)	18.86	15.72	75	200
Fluoride(mg/L)	0.42	0.39	1	1.5
Total Dissolve Solid(mg/L)	139	129	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)	<0.005	<0.005	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	
	Inlet to Water Treatment Plant (Anand Vihar)	Outlet to Water Treatment Plant (Anand Vihar)		
Monitoring Station				
Date of Sampling	14-Aug-2025	14-Aug-2025	Acceptable	Permissible
Selenium(mg/L)	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	6.46	6.25		
Potassium(mg/L)	2.59	2.62		
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	-	-

Pattanaik
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CMPDI, RI-VII, LAB
BHUBANESWAR

Jena

**Well Water Quality Report
Of
Ib valley Coal Field
For
May-2025**

Talcher 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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Well Water Quality Data: IB Valley Area

Project / OCP Monitoring Station	Smleswari OCP			Indian Drinking Standards (IS-10500):2012	
	Remja Kumarpara	Remja Telenpali	Gandoghara/Kha liakani	Acceptable	Permissible
Date of Sampling	26-May-2025	26-May-2025	26-May-2025	5	15
Colour(Hazen)	1	2	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity (NTU)	1	1	2	1	5
pH	7.32	7.46	7.32	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	77.25	20.33	77.25	200	600
Chloride(mg/L)	25.44	13.70	13.70	250	1000
Sulphate(mg/L)	20.14	4.60	44.3	200	400
Nitrate(mg/L)	7.26	<0.5	<0.5	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	75.51	15.90	103.32	200	600
Calcium(mg/L)	15.90	3.18	19.08	75	200
Fluoride(mg/L)	0.56	0.52	0.35	1	1.5
Total Dissolve Solid(mg/L)	150	55	170	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	0.13	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
Selenium(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	5.00	10.00	10.60	-	-
Potassium(mg/L)	1.60	1.70	0.90	-	-
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	-	-

Satish
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BHUBANESWAR

Jasanti



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CMPDI
Miniratna

Well Water Quality Data: IB Valley Area

Project / OCP	Smleswari OCP			Indian Drinking Standards (IS-10500):2012	
	Kausammunda/ Guthandanda	Dumermunda	Katruchua	Acceptable	Permissible
Monitoring Station					
Date of Sampling	26-May-2025	26-May-2025	26-May-2025	5	15
Colour(Hazen)	4	3	4	Agreeable	Agreeable
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	1	5
Turbidity (NTU)	2	2	2	6.5-8.5	No relaxation
pH	7.42	7.37	7.77	200	600
Total Alkalinity(mg/L)	277.38	121.98	321.21	250	1000
Chloride(mg/L)	13.80	146.78	13.70	200	400
Sulphate(mg/L)	2.40	51.36	15.60	45	No relaxation
Nitrate(mg/L)	<0.5	15.27	5.12	200	600
Total Hardness (Ca CO ₃)(mg/L)	154.99	218.57	203.07	75	200
Calcium(mg/L)	51.09	63.60	50.88	1	1.5
Fluoride(mg/L)	0.44	0.36	0.81	500	2000
Total Dissolve Solid(mg/L)	308	476	362	0.05	1.5
Copper(mg/L)	<0.03	<0.03	<0.03	0.1	0.3
Manganese(mg/L)	<0.04	0.071	<0.04	1	No relaxation
Iron(mg/L)	<0.1	<0.1	<0.1	5	15
Zinc(mg/L)	<0.04	0.09	<0.04	0.01	No relaxation
Lead(mg/L)	<0.005	<0.005	<0.005	0.003	No relaxation
Cadmium(mg/L)	<0.001	<0.001	<0.001	0.05	No relaxation
Total Chromium (mg/L)	<0.01	<0.01	<0.01	0.01	No relaxation
Arsenic(mg/L)	<0.005	<0.005	<0.005	0.5	2.4
Boron(mg/L)	<0.2	<0.2	<0.2	0.01	No relaxation
Selenium(mg/L)	<0.005	<0.005	<0.005		
Sodium(mg/L)	13.00	40.30	8.22		
Potassium(mg/L)	5.20	0.90	1.6		
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	-	-

K. Pattnaik
Authorised Signatory
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Jaswant



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Well Water Quality Data: IB Valley Area

Project / OCP Monitoring Station	Lajkura			Indian Drinking Standards (IS-10500):2012	
	Lahandabur	Pandipahar	Niktimal	Acceptable	Permissible
Date of Sampling	26-May-2025	26-May-2025	26-May-2025	5	15
Colour(Hazen)	2	2	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity (NTU)	3	1	2	1	5
pH	8.01	7.98	7.03	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	325.28	223.63	113.85	200	600
Chloride(mg/L)	125.25	70.45	46.97	250	1000
Sulphate(mg/L)	57.61	10.26	5.50	200	400
Nitrate(mg/L)	4.63	3.4	0.66	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	262.28	238.44	103.32	200	600
Calcium(mg/L)	95.40	65.19	28.62	75	200
Fluoride(mg/L)	0.42	0.32	0.64	1	1.5
Total Dissolve Solid(mg/L)	622	363	203	500	2000
Copper(mg/L)	<0.03	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	<0.04	0.048	0.1	0.3
Iron(mg/L)	<0.1	<0.1	<0.1	1	No relaxation
Zinc(mg/L)	<0.04	<0.04	0.20	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
Selenium(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	40.60	8	17.00	-	-
Potassium(mg/L)	6.50	0.9	1.70	-	-
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	-	-

Fatmeh
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Jamath



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Mini Lab

Well Water Quality Data: IB Valley Area

Project / OCP	Lajkura			Indian Drinking Standards (IS-10500):2012	
	Kanaktura	Chandimal	Tilaimal	Acceptable	Permissible
Monitoring Station					
Date of Sampling	26-May-2025	26-May-2025	26-May-2025	5	15
Colour(Hazen)	3	4	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity (NTU)	1	3	2	1	5
pH	8.01	7.88	6.87	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	126.05	138.24	113.85	200	600
Chloride(mg/L)	11.74	95.89	45.01	250	1000
Sulphate(mg/L)	5.04	50.63	23.6	200	400
Nitrate(mg/L)	<0.5	14.32	13.26	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	79.48	206.65	139.09	200	600
Calcium(mg/L)	17.49	55.65	44.52	75	200
Fluoride(mg/L)	0.91	0.41	0.63	1	1.5
Total Dissolve Solid(mg/L)	151	388	200	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)	0.06	0.05	<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
Selenium(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	9.00	11.02	11.23	-	-
Potassium(mg/L)	0.90	1.06	5.60	-	-
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	-	-

Testmark
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Well Water Quality Data: Lakhanpur Area

Project / OCP Monitoring Station	Lakhanpur			Indian Drinking Standards (IS-10500):2012	
	Baripahal	Lakhanpur	Lachuapara	Acceptable	Permissible
Date of Sampling	27-May-2025	27-May-2025	27-May-2025	5	15
Colour(Hazen)	3	1	2	Agreeable	Agreeable
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	1	5
Turbidity(NTU)	2	2	1	6.5-8.5	No relaxation
pH	7.82	7.35	7.13	200	600
Total Alkalinity(mg/L)	203.30	199.23	60.99	250	1000
Chloride(mg/L)	54.80	23.48	31.31	200	400
Sulphate(mg/L)	39.64	19.35	10.35	45	No relaxation
Nitrate(mg/L)	<0.5	2.11	25.36	200	600
Total Hardness (Ca CO ₃)(mg/L)	198.70	154.99	79.48	75	200
Calcium(mg/L)	60.42	25.55	27.03	1	1.5
Fluoride(mg/L)	0.54	0.70	0.36	500	2000
Total Dissolve Solid(mg/L)	365	268	180	0.05	1.5
Copper(mg/L)	<0.03	<0.03	<0.03	0.1	0.3
Manganese(mg/L)	<0.04	<0.04	<0.04	1	No relaxation
Iron(mg/L)	<0.1	<0.1	<0.1	5	15
Zinc(mg/L)	<0.04	0.15	0.16	0.01	No relaxation
Lead(mg/L)	<0.005	<0.005	<0.005	0.003	No relaxation
Cadmium(mg/L)	<0.001	<0.001	<0.001	0.05	No relaxation
Total Chromium (mg/L)	<0.01	<0.01	<0.01	0.01	No relaxation
Arsenic(mg/L)	<0.005	<0.005	<0.005	0.5	2.4
Boron(mg/L)	<0.2	<0.2	<0.2	0.01	No relaxation
Selenium(mg/L)	<0.005	<0.005	<0.005	-	-
Sodium(mg/L)	13.11	9.34	15.36	-	-
Potassium(mg/L)	6.34	2.31	4.36	-	-
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	-	-

Signature
Authorized Signatory
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Signature



सीएमपीडीआई
मिनी रोल
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Mini Roll

Well Water Quality Data: Lakhanpur Area

Project / OCP Monitoring Station	Lakhanpur			Indian Drinking Standards (IS-10500):2012	
	Ubra	Gourapara	Jurabaga	Acceptable	Permissible
Date of Sampling	27-May-2025	27-May-2025	27-May-2025	5	15
Colour(Hazen)	3	1		Agreeable	Agreeable
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	1	5
Turbidity(NTU)	3	1		6.5-8.5	No relaxation
pH	7.53	7.82	7.64		
Total Alkalinity(mg/L)	109.78	85.39	24.40	200	600
Chloride(mg/L)	48.93	25.44	158.52	250	1000
Sulphate(mg/L)	80.36	22.36	22.37	200	400
Nitrate(mg/L)	18.69	4.22	9.64	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	162.93	103.32	198.70	200	600
Calcium(mg/L)	49.29	31.80	62.01	75	200
Fluoride(mg/L)	0.95	0.48	0.57	1	1.5
Total Dissolve Solid(mg/L)	350	176	366	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)	0.18	0.19	0.09	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
Selenium(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	23.54	8.30	28		
Potassium(mg/L)	5.63	2.60	8.1		
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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Jaiswal



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Well Water Quality Data: Lakhanpur Area

Project / OCP	Lakhanpur			Indian Drinking Standards (IS-10500):2012	
	Kirarama	Karpapahal	Khaprapara	Acceptable	Permissible
Monitoring Station					
Date of Sampling	27-May-2025	27-May-2025	27-May-2025	5	15
Colour(Hazen)	3	1	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	1	3	1	1	5
pH	7.36	7.53	7.49	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	44.73	20.33	28.46	200	600
Chloride(mg/L)	15.66	166.35	9.79	250	1000
Sulphate(mg/L)	25.3	20.3	4.9	200	400
Nitrate(mg/L)	7.88	9.47	1.3	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	67.56	190.75	19.87	200	600
Calcium(mg/L)	9.54	58.83	6.36	75	200
Fluoride(mg/L)	0.62	0.74	0.45	1	1.5
Total Dissolve Solid(mg/L)	121	359	58	500	2000
Copper(mg/L)	<0.03	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	0.084	0.041	0.043	0.1	0.3
Iron(mg/L)	0.39	<0.1	<0.1	1	No relaxation
Zinc(mg/L)	0.18	<0.04	0.64	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
Selenium(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	8.63	28	7.9	-	-
Potassium(mg/L)	1.36	8.1	1.3	-	-
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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Well Water Quality Data: Lakhanpur Area

Project / OCP	Lakhanpur				Indian Drinking Standards (IS-10500):2012		
	Monitoring Station	Bhejikud	Gurhiali	Kusraloi	Banjari	Acceptable	Permissible
Date of Sampling	27-May-2025	27-May-2025	27-May-2025	27-May-2025	3	5	15
Colour(Hazen)	4	4	4	4	3	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	3	2	2	2	1	5
pH	7.56	7.86	6.81	7.63	7.63	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	166.71	105.72	48.79	85.39	85.39	200	600
Chloride(mg/L)	11.74	148.73	95.89	29.36	29.36	250	1000
Sulphate(mg/L)	20.65	55.63	30.69	20.73	20.73	200	400
Nitrate(mg/L)	6.9	15.36	15.61	3.64	3.64	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	127.17	266.26	210.62	83.45	83.45	200	600
Calcium(mg/L)	30.21	92.22	57.24	22.26	22.26	75	200
Fluoride(mg/L)	<0.3	0.58	1.28	0.42	0.42	1	1.5
Total Dissolve Solid(mg/L)	222	483	293	173	173	500	2000
Copper(mg/L)	<0.03	<0.03	<0.03	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	0.041	<0.04	<0.04	<0.04	<0.04	0.1	0.3
Iron(mg/L)	<0.1	<0.1	<0.1	<0.1	<0.1	1	No relaxation
Zinc(mg/L)	0.51	0.12	0.84	<0.04	<0.04	5	15
Lead(mg/L)	<0.005	<0.005	<0.005	<0.005	<0.005	0.01	No relaxation
Cadmium(mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	No relaxation
Total Chromium (mg/L)	<0.01	<0.01	<0.01	<0.01	<0.01	0.05	No relaxation
Arsenic(mg/L)	<0.005	<0.005	<0.005	<0.005	<0.005	0.01	No relaxation
Boron(mg/L)	<0.2	<0.2	<0.2	<0.2	<0.2	0.5	2.4
Selenium(mg/L)	<0.005	<0.005	<0.005	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	9.6	20.36	11.32	12.39	12.39	-	-
Potassium(mg/L)	1.3	4.7	1.3	4.07	4.07	-	-
Phenolics(mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.002
Residual Free Chlorine(mg/L)	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	1
MPN (Index/100 ml)	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	-	-

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Well Water Quality Data: Lakhanpur Area

Project / OCP Monitoring Station	Belpahar			Indian Drinking Standards (IS-10500):2012	
	Katapali	Kanika	Ulap	Acceptable	Permissible
Date of Sampling	27-May-2025	27-May-2025	27-May-2025	5	15
Colour(Hazen)	3	3	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	1	1	1	5
pH	7.65	7.13	7.98	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	109.78	24.40	260.22	200	600
Chloride(mg/L)	43.05	17.61	86.11	250	1000
Sulphate(mg/L)	42.9	20.6	98.36	200	400
Nitrate(mg/L)	4.60	8.6	2.58	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	166.91	35.77	266.26	200	600
Calcium(mg/L)	52.47	7.95	25.44	75	200
Fluoride(mg/L)	0.53	<0.3	0.95	1	1.5
Total Dissolve Solid(mg/L)	269	105	526	500	2000
Copper(mg/L)	<0.03	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	<0.04	0.070	0.1	0.3
Iron(mg/L)	<0.1	<0.1	<0.1	1	No relaxation
Zinc(mg/L)	<0.04	0.22	0.68	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
Selenium(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	10.68	11.64	20.60	-	-
Potassium(mg/L)	1.39	5.91	5.63	-	-
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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Well Water Quality Data: Lakhanpur Area

Project / OCP Monitoring Station	Belpahar				Indian Drinking Standards (IS-10500):2012	
	Thakurpara	Budhijam	Grindola	Tangardihi	Acceptable	Permissible
Date of Sampling	27-May-2025	27-May-2025	27-May-2025	27-May-2025	5	15
Colour(Hazen)	2	3	1	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity (NTU)	2	2	2	2	1	5
pH	7.57	7.67	7.65	7.69	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	288.69	296.82	384.00	158.57	200	600
Chloride(mg/L)	48.93	48.93	107.64	80.24	250	1000
Sulphate(mg/L)	18.68	18.96	70.65	39.11	200	400
Nitrate(mg/L)	2.66	1.47	15.13	18.6	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	198.70	127.17	313.95	218.57	200	600
Calcium(mg/L)	39.75	49.29	84.27	66.78	75	200
Fluoride(mg/L)	0.48	0.57	0.62	<0.3	1	1.5
Total Dissolve Solid(mg/L)	401	408	679	385	500	2000
Copper(mg/L)	<0.03	<0.03	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	<0.04	<0.04	<0.04	0.1	0.3
Iron(mg/L)	<0.1	<0.1	<0.1	<0.1	1	No relaxation
Zinc(mg/L)	0.54	<0.04	0.08	0.70	5	15
Lead(mg/L)	<0.005	<0.005	<0.005	<0.005	0.01	No relaxation
Cadmium(mg/L)	<0.001	<0.001	<0.001	<0.001	0.003	No relaxation
Total Chromium (mg/L)	<0.01	<0.01	<0.01	<0.01	0.05	No relaxation
Arsenic(mg/L)	<0.005	<0.005	<0.005	<0.005	0.01	No relaxation
Boron(mg/L)	<0.2	<0.2	<0.2	<0.2	0.5	2.4
Selenium(mg/L)	<0.005	<0.005	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	20.76	35.23	20.44	11.00	-	-
Potassium(mg/L)	6.71	12.64	10.95	2.50	-	-
Phenolics(mg/L)	<0.001	<0.001	<0.001	<0.001	0.001	0.002
Residual Free Chlorine(mg/L)	<0.2	<0.2	<0.2	<0.2	0.2	1
MPN (Index/100 ml)	Not Detected	Not Detected	Not Detected	Not Detected	-	-

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Well Water Quality Data: Mahalaxmi Area

Project / OCP Monitoring Station	Basundhara (W)			Indian Drinking Standards (IS-10500):2012	
	Jharpalam	Bileibahal	Tithejanagar	Acceptable	Permissible
Date of Sampling	28-May-2025	28-May-2025	28-May-2025	5	15
Colour(Hazen)	3	1	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity (NTU)	3	1	2	1	5
pH	8.03	7.64	7.43	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	130.11	28.46	77.25	200	600
Chloride(mg/L)	41.10	13.70	25.44	250	1000
Sulphate(mg/L)	79.34	34.69	30.60	200	400
Nitrate(mg/L)	24.34	5.63	10.4	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	242.41	27.82	87.43	200	600
Calcium(mg/L)	76.32	7.95	15.90	75	200
Fluoride(mg/L)	0.58	1.28	0.42	1	1.5
Total Dissolve Solid(mg/L)	374	125	171	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	0.05	0.09	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
Selenium(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	9.37	24.3	5		
Potassium(mg/L)	2.19	2.34	1.70		
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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Janaki



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Well Water Quality Data: Mahalaxmi Area

Project / OCP Monitoring Station	Basundhara (W)			Indian Drinking Standards (IS-10500):2012	
	Salingijharis	Kalatpani	Duduka	Acceptable	Permissible
Date of Sampling	28-May-2025	28-May-2025	28-May-2025	Acceptable	Permissible
Colour(Hazen)	4	2	4	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	1	3	2	1	5
pH	8.06	7.43	7.06	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	52.86	36.59	32.53	200	600
Chloride(mg/L)	13.70	23.48	13.70	250	1000
Sulphate(mg/L)	20.4	18.68	20.64	200	400
Nitrate(mg/L)	2.68	7.82	5.63	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	23.84	63.58	35.77	200	600
Calcium(mg/L)	7.95	12.72	7.95	75	200
Fluoride(mg/L)	0.53	<0.3	0.95	1	1.5
Total Dissolve Solid(mg/L)	119	120	97	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)	0.17	<0.04	0.60	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
Selenium(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	20.31	8.9	9.3	-	-
Potassium(mg/L)	5.26	2.40	2.40	-	-
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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Well Water Quality Data: Mahalaxmi Area

Project / OCP Monitoring Station	Basundhara (W)			Indian Drinking Standards (IS-10500):2012	
	Kripsira	Durubaga	Hemgiri	Acceptable	Permissible
Date of Sampling	28-May-2025	28-May-2025	28-May-2025	Acceptable	Permissible
Colour(Hazen)	4	4	3	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	1	2	1	1	5
pH	6.95	7.34	7.81	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	28.46	48.79	154.51	200	600
Chloride(mg/L)	33.27	15.66	27.40	250	1000
Sulphate(mg/L)	15.63	15.67	20.31	200	400
Nitrate(mg/L)	15.69	1.6	1.36	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	83.45	27.82	135.12	200	600
Calcium(mg/L)	25.44	9.54	38.16	75	200
Fluoride(mg/L)	0.48	0.57	0.62	1	1.5
Total Dissolve Solid(mg/L)	142	106	235	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	0.07	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
Selenium(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	9.67	14.36	9	-	-
Potassium(mg/L)	1.20	3.56	3.30	-	-
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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Well Water Quality Data: Mahalaxmi Area

Project / OCP Monitoring Station	Basundhara (W)			Indian Drinking Standards (IS-10500):2012	
	Jareikela	Kuchedega	Chhatabal	Acceptable	Permissible
Date of Sampling	28-May-2025	28-May-2025	28-May-2025	Acceptable	Permissible
Colour(Hazen)	3	3	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	3	2	3	1	5
pH	7.35	7.65	8.07	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	32.53	158.57	256.16	200	600
Chloride(mg/L)	17.61	84.15	60.67	250	1000
Sulphate(mg/L)	20.39	40.63	30.6	200	400
Nitrate(mg/L)	15.61	20.44	15.33	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	47.69	222.54	274.21	200	600
Calcium(mg/L)	6.36	68.37	74.73	75	200
Fluoride(mg/L)	<0.3	<0.3	<0.3	1	1.5
Total Dissolve Solid(mg/L)	123	393	428	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)	0.21	<0.1	<0.1	1	No relaxation
Zinc(mg/L)	0.09	0.14	<0.04	5	15
Lead(mg/L)	<0.005	0.009	<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
Selenium(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	15	12.6	10.1		
Potassium(mg/L)	4.50	5.60	3.20		
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	-	-

F. Anand
Authorised Signatory
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BHUBANESWAR

Jaswanti



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Well Water Quality Data: Basundhara Area

Project / OCP	Kulda			Indian Drinking Standards (IS-10500):2012	
	Ganjaiburh	Tikliparha	Barpali	Acceptable	Permissible
Monitoring Station					
Date of Sampling	29-May-2025	29-May-2025	29-May-2025	5	15
Colour(Hazen)	2	3	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	1	2	3	1	5
pH	7.25	7.35	7.23	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	317.15	288.69	85.39	200	600
Chloride(mg/L)	68.50	29.36	15.66	250	1000
Sulphate(mg/L)	26.5	14.38	20.3	200	400
Nitrate(mg/L)	5.9	10.3	2.55	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	250.36	135.12	63.58	200	600
Calcium(mg/L)	71.55	30.21	14.31	75	200
Fluoride(mg/L)	1.04	<0.3	0.85	1	1.5
Total Dissolve Solid(mg/L)	464	345	146	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	0.18	0.14	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
Selenium(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	15.4	20.6	10.30	-	-
Potassium(mg/L)	3.60	4.32	4.3	-	-
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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Jasmati



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Well Water Quality Data: Basundhara Area

Project / OCP Monitoring Station	Kulda				Indian Drinking Standards (IS-10500):2012	
	Kundren	Kenduadihi	Ustali	Sahaspur	Acceptable	Permissible
Date of Sampling	29-May-2025	29-May-2025	29-May-2025	29-May-2025	5	15
Colour(Hazen)	2	1	2	3	Agreeable	Agreeable
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	1	5
Turbidity(NTU)	1	1	2	2	6.5-8.5	No relaxation
pH	7.54	7.63	7.22	7.09	200	600
Total Alkalinity(mg/L)	459.46	629.82	394.40	182.97	250	1000
Chloride(mg/L)	62.00	68.50	19.57	168.30	200	400
Sulphate(mg/L)	25.10	20.10	26.31	64.28	45	No relaxation
Nitrate(mg/L)	2.7	10.3	15.24	8.31	200	600
Total Hardness (Ca CO ₃)(mg/L)	242.41	282.15	154.99	321.89	75	200
Calcium(mg/L)	57.24	60.42	31.80	92.22	1	1.5
Fluoride(mg/L)	0.36	<0.3	<0.3	<0.3	500	2000
Total Dissolve Solid(mg/L)	555	727	451	580	0.05	1.5
Copper(mg/L)	<0.03	<0.03	<0.03	<0.03	0.1	0.3
Manganese(mg/L)	<0.04	<0.04	<0.04	<0.04	1	No relaxation
Iron(mg/L)	<0.1	<0.1	<0.1	<0.1	5	15
Zinc(mg/L)	<0.04	<0.04	<0.04	0.05	0.01	No relaxation
Lead(mg/L)	<0.005	<0.005	<0.005	<0.005	0.003	No relaxation
Cadmium(mg/L)	<0.001	<0.001	<0.001	<0.001	0.05	No relaxation
Total Chromium (mg/L)	<0.01	<0.01	<0.01	<0.01	0.01	No relaxation
Arsenic(mg/L)	<0.005	<0.005	<0.005	<0.005	0.5	2.4
Boron(mg/L)	<0.2	<0.2	<0.2	<0.2	0.01	No relaxation
Selenium(mg/L)	<0.005	<0.005	<0.005	<0.005	-	-
Sodium(mg/L)	20.31	35.64	29.25	32.39	-	-
Potassium(mg/L)	10.73	20.64	10.67	4.67	-	-
Phenolics(mg/L)	<0.001	<0.001	<0.001	<0.001	0.001	0.002
Residual Free Chlorine(mg/L)	<0.2	<0.2	<0.2	<0.2	0.2	1
MPN (Index/100 ml)	Not Detected	Not Detected	Not Detected	Not Detected	-	-

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Well Water Quality Data: Basundhara Area

Project / OCP Monitoring Station	Kulda			Indian Drinking Standards (IS-10500):2012	
	Garjanbahal	Jhupranga	Kund	Acceptable	Permissible
Date of Sampling	29-May-2025	29-May-2025	29-May-2025		
Colour (Hazen)		3	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	2	2	1	5
pH	7.33	7.61	7.34	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	463.52	386.27	635.92	200	600
Chloride(mg/L)	21.53	25.44	68.50	250	1000
Sulphate(mg/L)	18.96	11.36	52.67	200	400
Nitrate(mg/L)	5.11	10.35	15.99	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	210.62	154.99	353.69	200	600
Calcium(mg/L)	38.16	25.44	60.00	75	200
Fluoride(mg/L)	0.88	0.77	<0.3	1	1.5
Total Dissolve Solid(mg/L)	478	421	766	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	0.16	0.74	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
Selenium(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	15.50	25.69	30.12		
Potassium(mg/L)	4.73	9.11	1.32		
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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Well Water Quality Data: Basundhara Area

Project / OCP	Garjanbahal			Indian Drinking Standards (IS-10500):2012	
	Rajaparah	Rengalpani	Nuadih	Acceptable	Permissible
Monitoring Station	29-May-2025	29-May-2025	29-May-2025	Acceptable	Permissible
Date of Sampling	29-May-2025	29-May-2025	29-May-2025	Acceptable	Permissible
Colour (Hazen)	1		3	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity (NTU)	2	2	2	1	5
pH	7.67	7.34	7.61	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	317.15	648.93	154.51	200	600
Chloride(mg/L)	23.48	80.24	13.70	250	1000
Sulphate(mg/L)	5.08	37.8	12.37	200	400
Nitrate(mg/L)	2.3	6.3	5.96	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	111.27	377.53	107.30	200	600
Calcium(mg/L)	36.57	56.00	23.85	75	200
Fluoride(mg/L)	<0.3	0.34	<0.3	1	1.5
Total Dissolve Solid(mg/L)	342	762	193	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	0.06	0.33	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
Selenium(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	22.37	21.83	4.4		
Potassium(mg/L)	9.34	6.19	0.91		
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	-	-

T. Jaiswal
Authorised Signatory
CMPDI, RI-VII, LAG
BHUBANESWAR

Jaiswal



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Well Water Quality Data: Basundhara Area

Project / OCP	Garjanbahal		Indian Drinking Standards (IS-10500):2012	
	Dhanarasi	Kandadhua	Acceptable	Permissible
Monitoring Station				
Date of Sampling	29-May-2025	29-May-2025		
Colour (Hazen)	1	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	2	1	5
pH	7.34	7.29	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	512.32	707.48	200	600
Chloride(mg/L)	48.93	68.50	250	1000
Sulphate(mg/L)	13.3	25.6	200	400
Nitrate(mg/L)	6.7	12.3	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	230.49	373.56	200	600
Calcium(mg/L)	62.01	92.22	75	200
Fluoride(mg/L)	0.77	<0.3	1	1.5
Total Dissolve Solid(mg/L)	579	803	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)	0.11	<0.1	1	No relaxation
Zinc(mg/L)	0.42	0.51	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
Selenium(mg/L)	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	30.65	29.34	-	-
Potassium(mg/L)	10.34	3.73	-	-
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	-	-

T. Jaiswal
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Jaiswal



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Well Water Quality Data: Orient Area

Project / OCP	Orient Mine No. 1 & 2			Indian Drinking Standards (IS-10500):2012	
	Charbati/Falsib una	Patrapali-Ii	Khinda	Acceptable	Permissible
Monitoring Station					
Date of Sampling	30-May-2025	30-May-2025	30-May-2025		
Colour(Hazen)	1	2	4	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity (NTU)	1	1	2	1	5
pH	7.63	7.69	6.85	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	158.57	73.19	36.59	200	600
Chloride(mg/L)	432.50	101.76	11.74	250	1000
Sulphate(mg/L)	4.18	39	20.97	200	400
Nitrate(mg/L)	15.31	2.47	6.76	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	798.77	131.14	23.84	200	600
Calcium(mg/L)	186.03	25.44	6.36	75	200
Fluoride(mg/L)	0.77	0.86	0.71	1	1.5
Total Dissolve Solid(mg/L)	963	304	107	500	2000
Copper(mg/L)	<0.03	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	0.090	0.067	0.049	0.1	0.3
Iron(mg/L)	<0.1	<0.1	<0.1	1	No relaxation
Zinc(mg/L)	<0.04	<0.04	0.14	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
Selenium(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	14.2	23.30	18.83		
Potassium(mg/L)	1.5	10.30	3.29		
Phenolies(mg/L)	<0.001	<0.001	<0.001	0.001	0.002
Residual Free Chlorine(mg/L)	<0.2	<0.2	<0.2	0.2	1
MPN (Index/100 ml)	Not Detected	Not Detected	Not Detected	-	-

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CMPDI, RI-VII, LAB
BHUBANESWAR

Jaswant



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Well Water Quality Data: Orient Area

Project / OCP	Orient Mine No. 1 & 2		Indian Drinking Standards (IS-10500):2012	
	Malda / Gatiapara	Hirma	Acceptable	Permissible
Monitoring Station	30-May-2025	30-May-2025	5	15
Date of Sampling	2	4	5	15
Colour(Hazen)	2	4	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity (NTU)	2	1	1	5
pH	6.02	6.31	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	24.40	8.13	200	600
Chloride(mg/L)	45.01	46.97	250	1000
Sulphate(mg/L)	15.61	46.95	200	400
Nitrate(mg/L)	6.82	2.49	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	59.61	95.38	200	600
Calcium(mg/L)	7.95	20.67	75	200
Fluoride(mg/L)	0.65	<0.3	1	1.5
Total Dissolve Solid(mg/L)	138	181	500	2000
Copper(mg/L)	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	0.329	0.099	0.1	0.3
Iron(mg/L)	<0.1	<0.1	1	No relaxation
Zinc(mg/L)	0.50	<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
Selenium(mg/L)	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	10.9	15.60		
Potassium(mg/L)	7.3	8.20		
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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Well Water Quality Data: Orient Area

Project / OCP	Orient Mine No. 3			Indian Drinking Standards (IS-10500):2012	
	Lapanga	Dhubenlipal	Sardhapali	Acceptable	Permissible
Monitoring Station					
Date of Sampling	30-May-2025	30-May-2025	30-May-2025	Acceptable	Permissible
Colour(Hazen)	4	4	3	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity (NTU)	4	3	3	1	5
pH	7.26	7.61	7.52	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	56.92	276.49	117.91	200	600
Chloride(mg/L)	166.35	169.51	103.72	250	1000
Sulphate(mg/L)	44.91	95.73	98.62	200	400
Nitrate(mg/L)	<0.5	22.69	16.38	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	234.47	544.44	230.49	200	600
Calcium(mg/L)	55.65	143.10	77.91	75	200
Fluoride(mg/L)	0.34	0.89	0.69	1	1.5
Total Dissolve Solid(mg/L)	426	761	465	500	2000
Copper(mg/L)	<0.03	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	0.085	0.084	0.086	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
Selenium(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	29.34	13.30	15.60	-	-
Potassium(mg/L)	15.3	1.70	10.10	-	-
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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Well Water Quality Data: Orient Area

Project / OCP	Orient Mine No. 4		Indian Drinking Standards (IS-10500):2012	
	Bhurkhamunda	Sunamal	Acceptable	Permissible
Monitoring Station	30-May-2025	30-May-2025	5	15
Date of Sampling	3	3	5	15
Colour(Hazen)	3	3	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity (NTU)	2	3	1	5
pH	6.53	7.21	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	36.59	150.44	200	600
Chloride(mg/L)	99.81	121.33	250	1000
Sulphate(mg/L)	22.97	64.97	200	400
Nitrate(mg/L)	2.66	20.71	45	No relaxation
Total Hardness (Ca CO ₃) (mg/L)	198.70	341.76	200	600
Calcium(mg/L)	49.29	68.37	75	200
Fluoride(mg/L)	0.41	<0.3	1	1.5
Total Dissolve Solid(mg/L)	295	489	500	2000
Copper(mg/L)	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	0.072	0.1	0.3
Iron(mg/L)	<0.1	0.12	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
Selenium(mg/L)	<0.005	<0.005	0.01	No relaxation
Sodium(mg/L)	30.1	12.3	-	-
Potassium(mg/L)	11.2	1.3	-	-
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	-	-

Sattar
Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

Jamali



सीएमपीडीआई
मिनी लैब
cmpdi
Mini Lab

Well Water Quality Data: Orient Area

Project / OCP	HBI	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	Sripura	Acceptable	Permissible
Date of Sampling	28-May-2025		
Colour(Hazen)	1	5	15
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity (NTU)	3	1	5
pH	7.24	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	227.70	200	600
Chloride(mg/L)	50.88	250	1000
Sulphate(mg/L)	77.95	200	400
Nitrate(mg/L)	30.21	45	No relaxation
Total Hardness (Ca CO ₃)(mg/L)	290.10	200	600
Calcium(mg/L)	87.45	75	200
Fluoride(mg/L)	0.62	1	1.5
Total Dissolve Solid(mg/L)	490	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
Selenium(mg/L)	<0.005	0.01	No relaxation
Sodium(mg/L)	19.4	-	-
Potassium(mg/L)	2.64	-	-
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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