

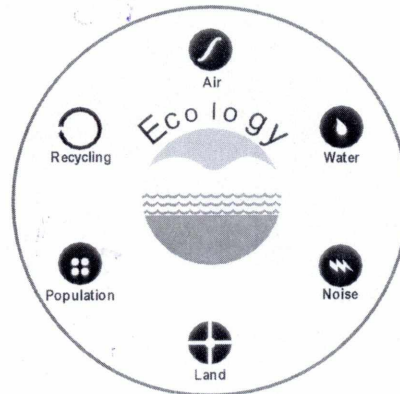
Job No.750001

**Environmental Monitoring Report
Of
Jagannath Area
For
July- 2021**

Talcher Coalfield



Mahanadi Coalfields Limited



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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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Test Report

AMBIENT AIR QUALITY DATA

Area :

Jagannath

(Compliance Station)

Project :

Ananta OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
06-Jul-21	Near NBVL Station (Reported only)	239	143	56	14.19	28.79	CHP, CT Road	About 600m
07-Jul-21	North-East of Mine	Machin ne	break down		-	-	Open-Cast Mine	Less than 500m
07-Jul-21	Central Nursery	147	98	32	11.80	28.61	Open-Cast Mine	Less than 500m
21-Jul-21	Near NBVL Station (Reported only)	195	104	47	10.36	21.20	CHP, CT Road	About 600m
22-Jul-21	Central Nursery	222	129	44	17.16	28.60	Open-Cast Mine	Less than 500m
22-Jul-21	North-East of Mine	229	127	47	8.55	18.52	Open-Cast Mine	Less than 500m

Project :

Jagannath OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
06-Jul-21	Near NBVL Station	239	143	56	14.19	28.79	CHP, CT Road	About 600m
06-Jul-21	Near MDTP	293	177	58	18.47	30.78	Railway Siding CHP	About 800m
07-Jul-21	Central Nursery (Reported Only)	147	98	32	11.80	28.61	Open-cast	Less than 500m
21-Jul-21	Near NBVL Station	195	104	47	10.36	21.20	CHP, CT Road	About 600m
21-Jul-21	Near MDTP	229	135	44	11.31	18.32	Railway Siding CHP	About 800m
22-Jul-21	Central Nursery (Reported Only)	222	129	44	17.16	28.60	Open-cast	Less than 500m

MoEF Standards Notification dated 25th September, 2000

600	300		120	120
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CMPDI, RI-VII, LAB
BHUBANESWAR

[Signature]

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Env. Lab
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Bhubaneswar



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Test Report

AMBIENT AIR QUALITY DATA

Area :

Jagannath

(Reference Station)

Project :

Jagannath OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
05-Jul-21	CWS Colony, Meeti	147	83	42	14.27	27.18	Mining Activity	About 1500 m
06-Jul-21	CWS Colony, Meeti	169	91	37	9.23	19.86	Mining Activity	About 1500 m
12-Jul-21	CWS Colony, Meeti	137	72	34	9.97	14.77	Mining Activity	About 1500 m
13-Jul-21	CWS Colony, Meeti	130	77	40	13.28	22.96	Mining Activity	About 1500 m
19-Jul-21	CWS Colony, Meeti	97	63	32	16.30	28.21	Mining Activity	About 1500 m
20-Jul-21	CWS Colony, Meeti	102	59	29	19.67	26.22	Mining Activity	About 1500 m
26-Jul-21	CWS Colony, Meeti	96	62	33	7.83	11.87	Mining Activity	About 1500 m
26-Jul-21	CWS Colony, Meeti	106	66	35	8.15	19.49	Mining Activity	About 1500 m

Jagannath

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*NAAQS,2009

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Test Report

AMBIENT AIR QUALITY DATA

Area :

Jagannath

(Reference Station)

Project :

Ananta OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
02-Jul-21	Guthasahi Village	124	77	35	12.17	33.81	Active Mining, Ananta OCP	About 3000m
03-Jul-21	Guthasahi Village	144	86	42	11.47	27.60	Active Mining, Ananta OCP	About 3000m
09-Jul-21	Guthasahi Village	95	56	30	14.36	17.09	Active Mining, Ananta OCP	About 3000m
10-Jul-21	Guthasahi Village	113	69	38	11.67	25.94	Active Mining, Ananta OCP	About 3000m
16-Jul-21	Guthasahi Village	99	63	29	20.47	25.35	Active Mining, Ananta OCP	About 3000m
17-Jul-21	Guthasahi Village	117	71	31	16.45	18.27	Active Mining, Ananta OCP	About 3000m
23-Jul-21	Guthasahi Village	114	64	33	26.74	27.23	Active Mining, Ananta OCP	About 3000m
24-Jul-21	Guthasahi Village	108	65	37	19.82	36.45	Active Mining, Ananta OCP	About 3000m
29-Jul-21	Guthasahi Village	101	57	30	14.83	28.42	Active Mining, Ananta OCP	About 3000m
30-Jul-21	Guthasahi Village	117	59	39	16.96	29.32	Active Mining, Ananta OCP	About 3000m

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Jagannath

Project	Jagannath OCP				
Monitoring Station	CWS Colony, Meeti				
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
05-Jul-21	<20.0	4.78	<0.1	<1.0	<1.0
06-Jul-21	<20.0	6.21	<0.1	<1.0	<1.0
12-Jul-21	<20.0	5.23	<0.1	<1.0	<1.0
13-Jul-21	<20.0	6.23	<0.1	<1.0	<1.0
19-Jul-21	<20.0	3.96	<0.1	<1.0	<1.0
20-Jul-21	<20.0	4.36	<0.1	<1.0	<1.0
26-Jul-21	<20.0	5.15	<0.1	<1.0	<1.0
27-Jul-21	<20.0	6.23	<0.1	<1.0	<1.0
Standard	400 (24hours)	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Jagannath

Project	Ananta OCP				
Monitoring Station	Guthasahi Village				
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
02-Jul-21	<20.0	4.86	<0.1	<1.0	<1.0
03-Jul-21	<20.0	5.42	<0.1	<1.0	<1.0
09-Jul-21	<20.0	4.87	<0.1	<1.0	<1.0
10-Jul-21	<20.0	4.53	<0.1	<1.0	<1.0
16-Jul-21	<20.0	5.52	<0.1	<1.0	<1.0
17-Jul-21	<20.0	4.40	<0.1	<1.0	<1.0
23-Jul-21	<20.0	4.62	<0.1	<1.0	<1.0
24-Jul-21	<20.0	3.72	<0.1	<1.0	<1.0
29-Jul-21	<20.0	5.32	<0.1	<1.0	<1.0
30-Jul-21	<20.0	6.02	<0.1	<1.0	<1.0
Standard	400(24hours)	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

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TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Jagannath

PROJECT :

Ananta OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
14-Jul-21	Near NBVL Station (Reported only)	57.8	54.5
15-Jul-21	Central Nursery	58.4	55.1
15-Jul-21	Guthasahi Village	56.5	51.5
15-Jul-21	North East of the Mine	60.4	58.3
23-Jul-21	Near NBVL Station (Reported only)	61.4	57.3
23-Jul-21	North East of the Mine	63.7	60.8
23-Jul-21	Central Nursery	58.7	52.4
23-Jul-21	Guthasahi Village	57.6	53.4

PROJECT :

Jagannath OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
14-Jul-21	CWS Colony, MEETI	59.4	57.8
14-Jul-21	Near MDTP	60.1	56.8
14-Jul-21	Near NBVL Station	57.8	54.5
15-Jul-21	Central Nursery (Reported only)	58.4	55.1
23-Jul-21	Near MDTP	57.6	55.1
23-Jul-21	Near NBVL Station	61.4	57.3
23-Jul-21	Central Nursery (Reported only)	58.7	52.4
23-Jul-21	CWS Colony, MEETI	61.9	56.8

MoEF Standard Notification dated 25th September, 2000

6.00 AM -10.00 PM Leq 75dB(A)

10.00 PM -6.00 AM Leq 70dB(A)

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EFFLUENT QUALITY DATA

Area :

Jagannath

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

Project :

Ananta OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
14-Jul-21	Mine Sump Water	7.05					
14-Jul-21	STP OUTLET	7.75		40		<2.0	
30-Jul-21	STP OUTLET	6.98		42		<2.0	

Project :

Jagannath OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
14-Jul-21	Central Sump	7.26					
14-Jul-21	Near MDTP	7.54	<4.0	34	24		
14-Jul-21	STP OUTLET	7.84		38		<2.0	
14-Jul-21	West Sump	7.11					
30-Jul-21	Near MDTP	7.65	<4.0	54	36		
30-Jul-21	STP OUTLET	7.67		38		<2.0	

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MoEF Standard Notification dated 25th September, 2000 and MoEF Schedule VI, General standard for discharge of Environmental Pollutants Part A: Effluents	5.5-9.0	10	100	250	30
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Drinking Water Quality Data Jagannath Area

Project / OCP	Jagannath OCP		Indian Drinking Standards (IS-10500):2012	
	Balanda Colony Tap Water	Jagannath Colony Tap Water		
Monitoring Station				
Date of Sampling	1-Jul-2021	1-Jul-2021	Acceptable	Permissible
Colour(Hazen)	2	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	1	2	1	5
pH	7.30	7.18	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	48	52	200	600
Total Hardness (Ca CO ₃)(mg/L)	52	172	200	600
Iron(mg/L)	<0.1	<0.1	1.0	No relaxation
Chloride(mg/L)	9.93	29.79	250	1000
Total Dissolve Solid(mg/L)	348	340	500	2000
Calcium(mg/L)	14.43	46.49	75	200
Copper(mg/L)	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	<0.04	0.1	0.3
Sulphate(mg/L)	141.91	139.12	200	400
Nitrate(mg/L)	<0.50	<0.50	45	No relaxation
Fluoride(mg/L)	1.15	1.10	1	1.5
Arsenic(mg/L)	<0.005	<0.005	0.01	No relaxation
Lead(mg/L)	<0.005	<0.005	0.01	No relaxation
Zinc(mg/L)	<0.04	<0.04	5	15
Total Chromium (mg/L)	<0.01	<0.01	0.05	No relaxation
Boron(mg/L)	<0.10	<0.10	0.5	2.4
Cadmium(mg/L)	<0.001	<0.001	0.003	No relaxation

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Drinking Water Quality Data Jagannath Area

Project / OCP	Jagannath OCP		Indian Drinking Standards (IS-10500):2012	
	Balanda Colony Tap Water	Jagannath Colony Tap Water	Acceptable	Permissible
Monitoring Station				
Date of Sampling	1-Jul-2021	1-Jul-2021		
MPN (Index/100 ml)	12	11	–	–
Residual Free Chlorine(mg/L)	<0.2	<0.2	0.2	1.0

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Drinking Water Quality Data Jagannath Area

Project / OCP	Ananta OCP		Indian Drinking Standards (IS-10500):2012	
	Ananta Colony Tap Water	Dera Village Tube Well Water		
Monitoring Station				
Date of Sampling	1-Jul-2021	1-Jul-2021	Acceptable	Permissible
MPN (Index/100 ml)	14	5.5	-	-
Residual Free Chlorine(mg/L)	<0.2	<0.2	0.2	1.0

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Drinking Water Quality Data Jagannath Area

Project / OCP	Ananta OCP		Indian Drinking Standards (IS-10500):2012	
	Ananta Colony Tap Water	Dera Village Tube Well Water		
Monitoring Station				
Date of Sampling	1-Jul-2021	1-Jul-2021	Acceptable	Permissible
Colour(Hazen)	2	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	4	2	1	5
pH	7.27	6.81	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	32	136	200	600
Total Hardness (Ca CO ₃)(mg/L)	140	180	200	600
Iron(mg/L)	<0.1	<0.1	1.0	No relaxation
Chloride(mg/L)	27.8	27.8	250	1000
Total Dissolve Solid(mg/L)	102	306	500	2000
Calcium(mg/L)	48.10	51.30	75	200
Copper(mg/L)	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	<0.04	0.1	0.3
Sulphate(mg/L)	37.21	57.94	200	400
Nitrate(mg/L)	<0.5	11.53	45	No relaxation
Fluoride(mg/L)	<0.30	0.37	1	1.5
Arsenic(mg/L)	<0.005	<0.005	0.01	No relaxation
Lead(mg/L)	<0.005	<0.005	0.01	No relaxation
Zinc(mg/L)	<0.04	<0.04	5	15
Total Chromium (mg/L)	<0.01	<0.01	0.05	No relaxation
Boron(mg/L)	<0.10	<0.10	0.5	2.4
Cadmium(mg/L)	<0.001	<0.001	0.003	No relaxation

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Jagannath Air Stations

Jagannath Air monitoring stations



Odisha

Danara

Jambubahali

Singida

Anantabereni

Hensamul

Deracolliery Twp

Rodhasa

Near MDTP (CS)

Near NBVL station (CS)

Central Nursery (CS)

Google Earth

satlab

Image Landsat / Copernicus

Image © 2021 Maxar Technologies

Mahindrapur

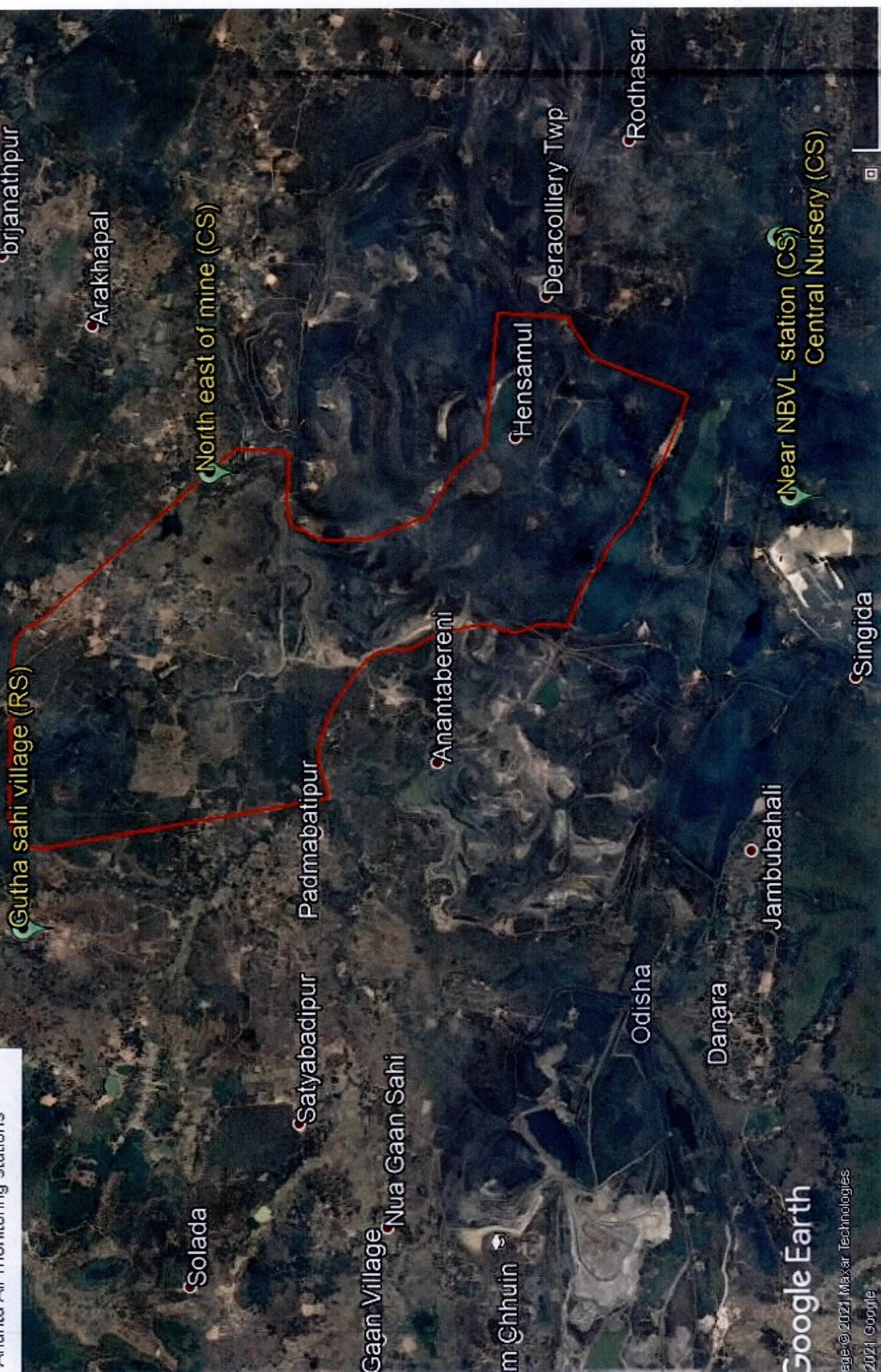
GWS Colony, Meeti (RS)

Fertilizer Corporation

Jag

Ananta Air Stations

Ananta Air monitoring stations



Job No.750001

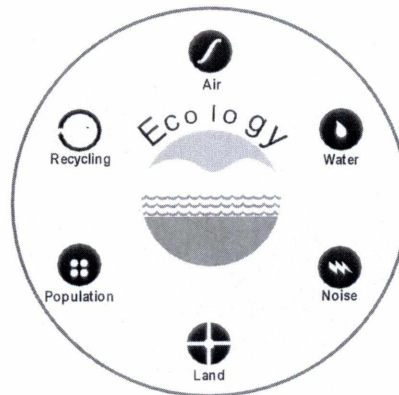
**Environmental Monitoring Report
Of
Bharatpur Area
For
July- 2021**

Talcher Coalfield



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Mahanadi Coalfields Limited



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

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

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Test Report

AMBIENT AIR QUALITY DATA

Area :

Bharatpur

(Compliance Station)

Project :

Bharatpur 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
08-Jul-21	Near MGR-RLS of Bharatpur	213	122	54	10.41	24.10	Railway Siding	About 500m
08-Jul-21	Near ETP/Workshop	173	99	39	15.26	20.72	Mining Activities & Coal Stock	Above 500m
08-Jul-21	Near Regional Store	182	123	41	11.74	23.48	Mining Activities	About 500m
08-Jul-21	North-West Point of the Mine	241	139	58	17.05	28.42	Domestic & Mining Activities	About 500m
26-Jul-21	Near MGR-RLS of Bharatpur	177	109	43	9.23	15.98	Railway Siding	About 500m
26-Jul-21	Near ETP/Workshop	150	84	43	14.58	24.31	Mining Activities & Coal Stock	Above 500m
26-Jul-21	Near Regional Store	149	90	38	10.84	16.78	Mining Activities	About 500m
26-Jul-21	North-West Point of the Mine	209	128	48	11.10	20.96	Domestic & Mining Activities	About 500m

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MoEF Standards Notification dated 25th September, 2000	600	300		120	120
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Test Report

AMBIENT AIR QUALITY DATA

Area :

Bharatpur

(Reference Station)

Project :

Chhendipada 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
20-Jul-21	Security Post of Chhendipada OCP	105	58	33	18.81	29.11	Mining Activities	About 500m
26-Jul-21	Security Post of Chhendipada OCP	125	72	39	16.14	22.00	Mining Activities	About 500m
27-Jul-21	Security Post of Chhendipada OCP	133	82	42	16.05	24.32	Mining Activities	About 500m

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Bhubaneswar

*NAAQS,2009		100	60	80	80
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Test Report

AMBIENT AIR QUALITY DATA

Area :

Bharatpur

(Reference Station)

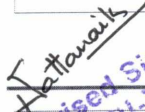
Project :


Bharatpur OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
02-Jul-21	Natedi Village (Reported Only)	120	63	36	22.17	59.70	Coal Transportation Road	About 2km
02-Jul-21	Near Joragdia Village	127	74	40	12.30	24.89	Transportation, Domestic Kooking	About 1000m
03-Jul-21	Near Joragdia Village	129	85	35	18.19	24.90	Transportation, Domestic Kooking	About 1000m
03-Jul-21	Natedi Village (Reported Only)	139	76	45	12.87	29.62	Coal Transportation Road	About 2km
09-Jul-21	Near Joragdia Village	111	69	37	13.81	18.41	Transportation, Domestic Kooking	About 1000m
09-Jul-21	Natedi Village (Reported Only)	126	73	44	15.50	32.52	Coal Transportation Road	About 2km
10-Jul-21	Near Joragdia Village	107	66	32	18.92	27.59	Transportation, Domestic Kooking	About 1000m
10-Jul-21	Natedi Village (Reported Only)	132	83	41	16.24	39.48	Coal Transportation Road	About 2km
16-Jul-21	Near Joragdia Village	120	71	38	18.37	36.74	Transportation, Domestic Kooking	About 1000m
16-Jul-21	Natedi Village (Reported Only)	88	49	25	19.05	34.20	Coal Transportation Road	About 2km
17-Jul-21	Near Joragdia Village	132	63	31	10.15	21.14	Transportation, Domestic Kooking	About 1000m
17-Jul-21	Natedi Village (Reported Only)	95	55	23	16.86	26.09	Coal Transportation Road	About 2km
23-Jul-21	Natedi Village (Reported Only)	131	75	33	18.05	31.13	Coal Transportation Road	About 2km
23-Jul-21	Near Joragdia Village	113	70	30	28.10	28.10	Transportation, Domestic Kooking	About 1000m
24-Jul-21	Near Joragdia Village	97	61	26	21.34	28.25	Transportation, Domestic Kooking	About 1000m
24-Jul-21	Natedi Village (Reported Only)	124	78	35	13.65	24.43	Coal Transportation Road	About 2km
29-Jul-21	Near Joragdia Village	103	67	30	26.10	32.63	Transportation, Domestic Kooking	About 1000m
29-Jul-21	Natedi Village (Reported Only)	108	74	24	13.94	25.17	Coal Transportation Road	About 2km
30-Jul-21	Natedi Village (Reported Only)	140	80	45	12.85	25.12	Coal Transportation Road	About 2km
30-Jul-21	Near Joragdia Village	149	92	31	16.33	30.92	Transportation, Domestic Kooking	About 1000m

	100	60	80	80
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 CMPDI, RI-VII
 Bhubaneswar



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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Bharatpur

Project	Bharatpur OCP				
Monitoring Station	Near Joragadia Village				
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
02-Jul-21	<20.0	6.06	<0.1	<1.0	<1.0
03-Jul-21	<20.0	4.23	<0.1	<1.0	<1.0
09-Jul-21	<20.0	5.46	<0.1	<1.0	<1.0
10-Jul-21	<20.0	6.21	<0.1	<1.0	<1.0
16-Jul-21	<20.0	4.58	<0.1	<1.0	<1.0
17-Jul-21	<20.0	3.39	<0.1	<1.0	<1.0
23-Jul-21	<20.0	6.11	<0.1	<1.0	<1.0
24-Jul-21	<20.0	5.89	<0.1	<1.0	<1.0
29-Jul-21	<20.0	4.15	<0.1	<1.0	<1.0
30-Jul-21	<20.0	4.22	<0.1	<1.0	<1.0
Standard	400(24hours)	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Bharatpur

Project	Bharatpur OCP				
Monitoring Station	Natedi Village (Reported Only)				
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
02-Jul-21	<20.0	3.76	<0.1	<1.0	<1.0
03-Jul-21	<20.0	2.64	<0.1	<1.0	<1.0
09-Jul-21	<20.0	3.86	<0.1	<1.0	<1.0
10-Jul-21	<20.0	2.94	<0.1	<1.0	<1.0
16-Jul-21	<20.0	6.15	<0.1	<1.0	<1.0
17-Jul-21	<20.0	4.79	<0.1	<1.0	<1.0
23-Jul-21	<20.0	3.68	<0.1	<1.0	<1.0
24-Jul-21	<20.0	4.52	<0.1	<1.0	<1.0
29-Jul-21	<20.0	3.66	<0.1	<1.0	<1.0
30-Jul-21	<20.0	4.89	<0.1	<1.0	<1.0
Standard	400(24hours)	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

Hathorik

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Bharatpur

Project	Chhendipada OCP				
Monitoring Station	Security Post of Chhendipada OCP				
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
20-Jul-21	<20.0	6.15	<0.1	<1.0	<1.0
26-Jul-21	<20.0	4.56	<0.1	<1.0	<1.0
27-Jul-21	<20.0	3.84	<0.1	<1.0	<1.0
Standard	400(24hours)	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

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TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Bharatpur

PROJECT :

Bharatpur OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
14-Jul-21	Near MGR-RLS of Bharatpur	67.5	64.8
14-Jul-21	North West Point of Mine	65.8	62.4
14-Jul-21	Near Regional Store	58.6	55.6
14-Jul-21	Near Wokshop	68.4	65.3
23-Jul-21	Near MGR-RLS of Bharatpur	69.1	65.3
24-Jul-21	North West Point of Mine	71.8	69.8
24-Jul-21	Near Regional Store	60.2	56.8
24-Jul-21	Near Wokshop	66.1	61.7

MoEF Standard Notification dated 25th September, 2000

6.00 AM - 10.00 PM Leq 75dB(A)

10.00 PM - 6.00 AM Leq 70dB(A)

V. Pattanayak
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A Tata Group Company

TABLE--

EFFLUENT QUALITY DATA

Area :

Bharatpur

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

Project :

Bharatpur OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
13-Jul-21	Workshop ETP Clear Water Tank	7.70	<4.0	30	24		
14-Jul-21	STP Outlet (pH, TSS, Faecal Coliform, BOD)	7.97		44		<2.0	
30-Jul-21	STP Outlet (pH, TSS, Faecal Coliform, BOD)	7.56		36		<2.0	
30-Jul-21	Workshop ETP Clear Water Tank	7.81	<4.0	58	44		

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[Signature]

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CMPDI, RI-VII
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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A Min. Rates Company

TABLE--

EFFLUENT QUALITY DATA

Area :

Bharatpur

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

Project :

Bharatpur OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
13-Jul-21	Mine Sump Water - Main Sump	7.43					
13-Jul-21	Mine Sump Water - Old Quarry Sump	6.62					
13-Jul-21	Mine Sump Water - South Quarry Sump	7.04					

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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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Drinking Water Quality Data Bharatpur Area

Project / OCP	Bharatpur OCP	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	Time Office, BOCP		
Date of Sampling	13-Jul-2021	Acceptable	Permissible
Colour(Hazen)	1	5	15
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	3	1	5
pH	7.09	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	200	200	600
Total Hardness (Ca CO ₃)(mg/L)	172	200	600
Iron(mg/L)	<0.1	1.0	No relaxation
Chloride(mg/L)	25.81	250	1000
Total Dissolve Solid(mg/L)	318	500	2000
Calcium(mg/L)	51.30	75	200
Copper(mg/L)	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	0.1	0.3
Sulphate(mg/L)	18.68	200	400
Nitrate(mg/L)	20.03	45	No relaxation
Fluoride(mg/L)	0.71	1	1.5
Arsenic(mg/L)	<0.005	0.01	No relaxation
Lead(mg/L)	<0.005	0.01	No relaxation
Zinc(mg/L)	<0.04	5	15
Total Chromium (mg/L)	<0.01	0.05	No relaxation
Boron(mg/L)	<0.10	0.5	2.4
Cadmium(mg/L)	<0.001	0.003	No relaxation

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Drinking Water Quality Data Bharatpur Area

Project / OCP	Bharatpur OCP	Indian Drinking Standards (IS-10500):2012	
		Acceptable	Permissible
Monitoring Station	Time Office, BOCP		
Date of Sampling	13-Jul-2021		
MPN (Index/100 ml)	8.3	—	—
Residual Free Chlorine(mg/L)	<0.2	0.2	1.0

K. Jaiswal

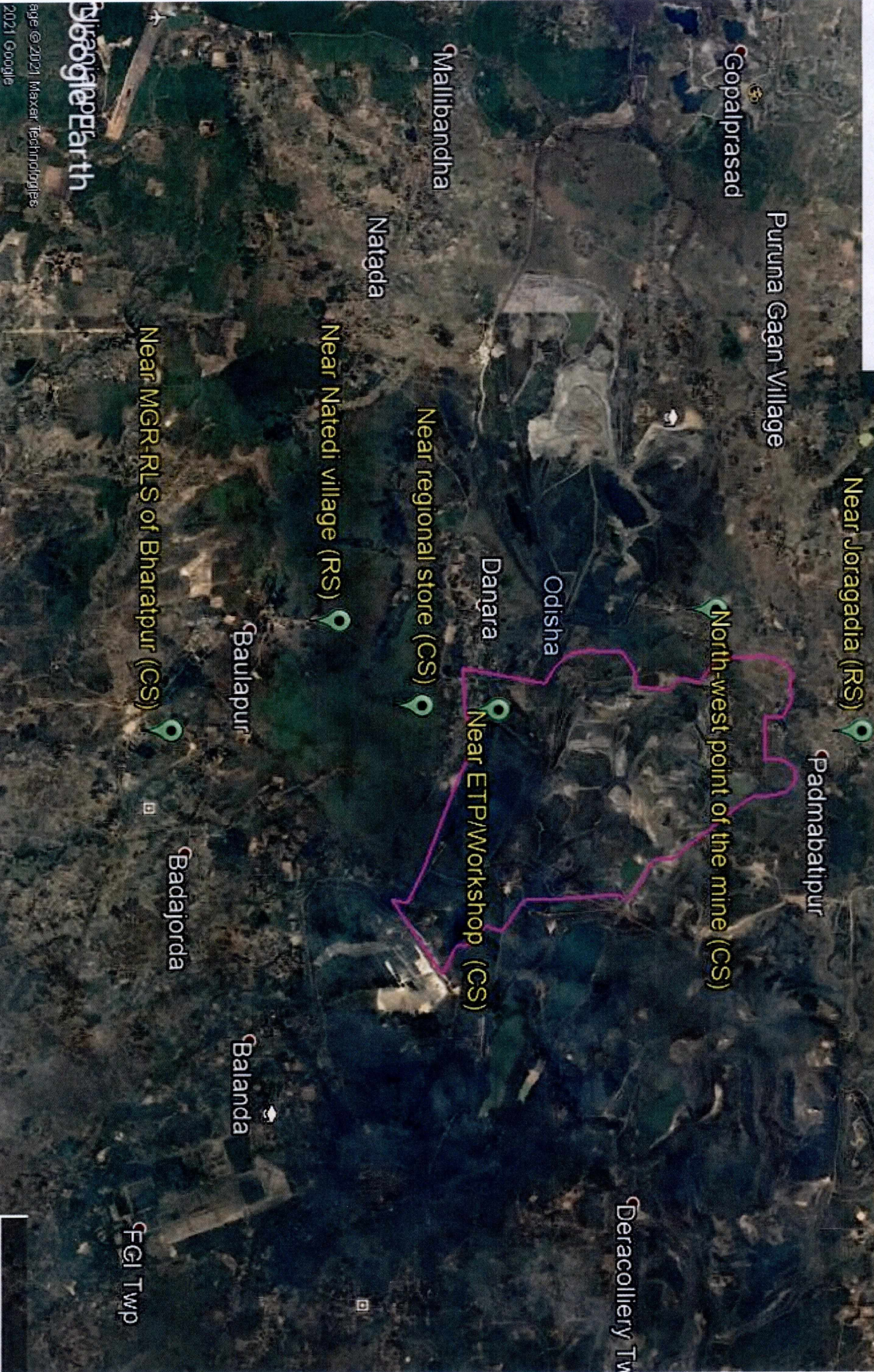
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Bhubaneswar

Bharatpur Air Stations

Bharatpur Air monitoring stations



Job No.750001

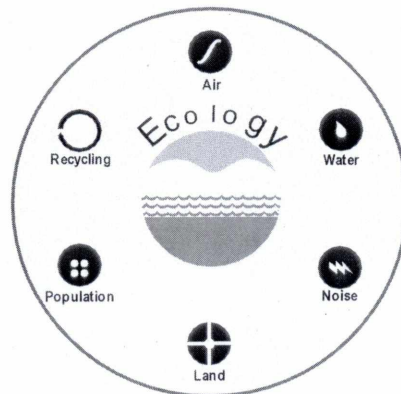
**Environmental Monitoring Report
Of
Lingaraj Area
For
July- 2021**

Talcher Coalfield



MCL

Mahanadi Coalfields Limited



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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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Test Report

AMBIENT AIR QUALITY DATA

Area :

Lingaraj

(Compliance Station)

Project :

Lingaraj OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
07-Jul-21	Near OB Dump No. 10 (Near North Side of Mine)	213	137	52	15.41	23.97	Mining Activities, Coal Corridor	About 500m
07-Jul-21	Near Lingaraj to Dera Road	247	133	39	12.42	16.56	Coal Transportation Road	Less than 500m
07-Jul-21	IWSS	291	177	49	12.87	21.45	Coal Transportation Road, Railway Siding, Coal S.Y	About 500m
07-Jul-21	Near OB Dump No. 5 (South Side of the Mine)	267	153	52	13.52	15.60	Transportation Road, Mining Activities	About 500m
21-Jul-21	Near OB Dump No. 10 (Near North Side of Mine)	228	141	54	12.56	25.59	Mining Activities, Coal Corridor	About 500m
21-Jul-21	Near Lingaraj to Dera Road	224	123	44	9.26	16.98	Coal Transportation Road	Less than 500m
21-Jul-21	Near OB Dump No. 5 (South Side of the Mine)	201	113	57	13.19	22.98	Transportation Road, Mining Activities	About 500m
22-Jul-21	IWSS	246	130	46	13.34	23.20	Coal Transportation Road, Railway Siding, Coal S.Y	About 500m

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BHUBANESWAR

24/9/21

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Bhubaneswar

MoEF Standards Notification dated 25th September, 2000	500	250		120	120
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Test Report

AMBIENT AIR QUALITY DATA

Area :

Lingaraj

(Reference Station)

Project :

Lingaraj OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
02-Jul-21	Near Kankili Community Centre	153	83	44	13.76	30.90	Mining Activity	Within 10km
03-Jul-21	Near Kankili Community Centre	146	73	36	14.13	24.43	Mining Activity	Within 10km
08-Jul-21	Near Kankili Community Centre	121	70	29	11.79	24.78	Mining Activity	Within 10km
09-Jul-21	Near Kankili Community Centre	117	79	34	10.13	30.94	Mining Activity	Within 10km
15-Jul-21	Near Kankili Community Centre	138	77	29	11.74	22.58	Mining Activity	Within 10km
16-Jul-21	Near Kankili Community Centre	112	71	34	11.02	30.30	Mining Activity	Within 10km
22-Jul-21	Near Kankili Community Centre	116	67	37	16.99	28.32	Mining Activity	Within 10km
23-Jul-21	Near Kankili Community Centre	101	58	31	7.11	16.00	Mining Activity	Within 10km

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*NAAQS,2009		100	60	80	80
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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Lingaraj

Project	Lingaraj OCP				
Monitoring Station	Near Kankili Community Centre				
Date of sampling	Ammonia (NH₃)	Ozone (O₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	<i>(µg/m³)</i>	<i>(µg/m³)</i>	<i>(µg/m³)</i>	<i>(ng/m³)</i>	<i>(ng/m³)</i>
02-Jul-21	<20.0	3.71	<0.1	<1.0	<1.0
03-Jul-21	<20.0	4.72	<0.1	<1.0	<1.0
08-Jul-21	<20.0	3.76	<0.1	<1.0	<1.0
09-Jul-21	<20.0	4.89	<0.1	<1.0	<1.0
15-Jul-21	<20.0	3.26	<0.1	<1.0	<1.0
16-Jul-21	<20.0	4.36	<0.1	<1.0	<1.0
22-Jul-21	<20.0	3.72	<0.1	<1.0	<1.0
23-Jul-21	<20.0	4.70	<0.1	<1.0	<1.0
Standard	400(24hours)	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

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TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Lingaraj

PROJECT :

Lingaraj OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
15-Jul-21	Near Lingaraj to Dera Road	58.3	54.9
15-Jul-21	IWSS	60.8	57.4
15-Jul-21	Near OB Dump No.5 (South Side of the Mine)	61.7	56.5
15-Jul-21	Near OB Dump No.10 (North Side of the Mine)	64.5	60.4
23-Jul-21	Near Lingaraj to Dera Road	55.7	51.4
23-Jul-21	IWSS	56.8	53.2
23-Jul-21	Near OB Dump No.5 (South Side of the Mine)	64.4	60.6
23-Jul-21	Near OB Dump No.10 (North Side of the Mine)	63.7	60.3

MoEF Standard Notification dated 25th September, 2000

6.00 AM -10.00 PM Leq 75dB(A)

10.00 PM -6.00 AM Leq 70dB(A)

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TABLE--

EFFLUENT QUALITY DATA

Area :

Lingaraj

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

Project :

Lingaraj OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
14-Jul-21	Clear Water Reservoir of Workshop ETP	7.71	<4.0	38	32		
14-Jul-21	Mine Sump Water	7.91					
30-Jul-21	Clear Water Reservoir of Workshop ETP	8.11	<4.0	40	32		

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MoEF Standard Notification dated 25th September, 2000 and MoEF Schedule VI, General standard for discharge of Environmental Pollutants Part A: Effluents	5.5-9.0	10	100	250	30
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Drinking Water Quality Data Lingraj Area

Project / OCP	Lingraj OCP	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	GM Office, Lingraj Area Tap Water	Acceptable	Permissible
Date of Sampling	14-Jul-2021	Acceptable	Permissible
Colour(Hazen)	1	5	15
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	1	1	5
pH	6.86	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	36	200	600
Total Hardness (Ca CO ₃)(mg/L)	48	200	600
Iron(mg/L)	<0.1	1.0	No relaxation
Chloride(mg/L)	9.93	250	1000
Total Dissolve Solid(mg/L)	104	500	2000
Calcium(mg/L)	16.03	75	200
Copper(mg/L)	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	0.1	0.3
Sulphate(mg/L)	33.53	200	400
Nitrate(mg/L)	<0.50	45	No relaxation
Fluoride(mg/L)	<0.30	1	1.5
Arsenic(mg/L)	<0.005	0.01	No relaxation
Lead(mg/L)	<0.005	0.01	No relaxation
Zinc(mg/L)	0.10	5	15
Total Chromium (mg/L)	<0.01	0.05	No relaxation
Boron(mg/L)	<0.10	0.5	2.4
Cadmium(mg/L)	<0.001	0.003	No relaxation

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Drinking Water Quality Data Lingraj Area

Project / OCP	Lingraj OCP	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	GM Office, Lingraj Area Tap Water		
Date of Sampling	14-Jul-2021	Acceptable	Permissible
MPN (Index/100 ml)	<1.8	—	—
Residual Free Chlorine(mg/L)	<0.2	0.2	1.0

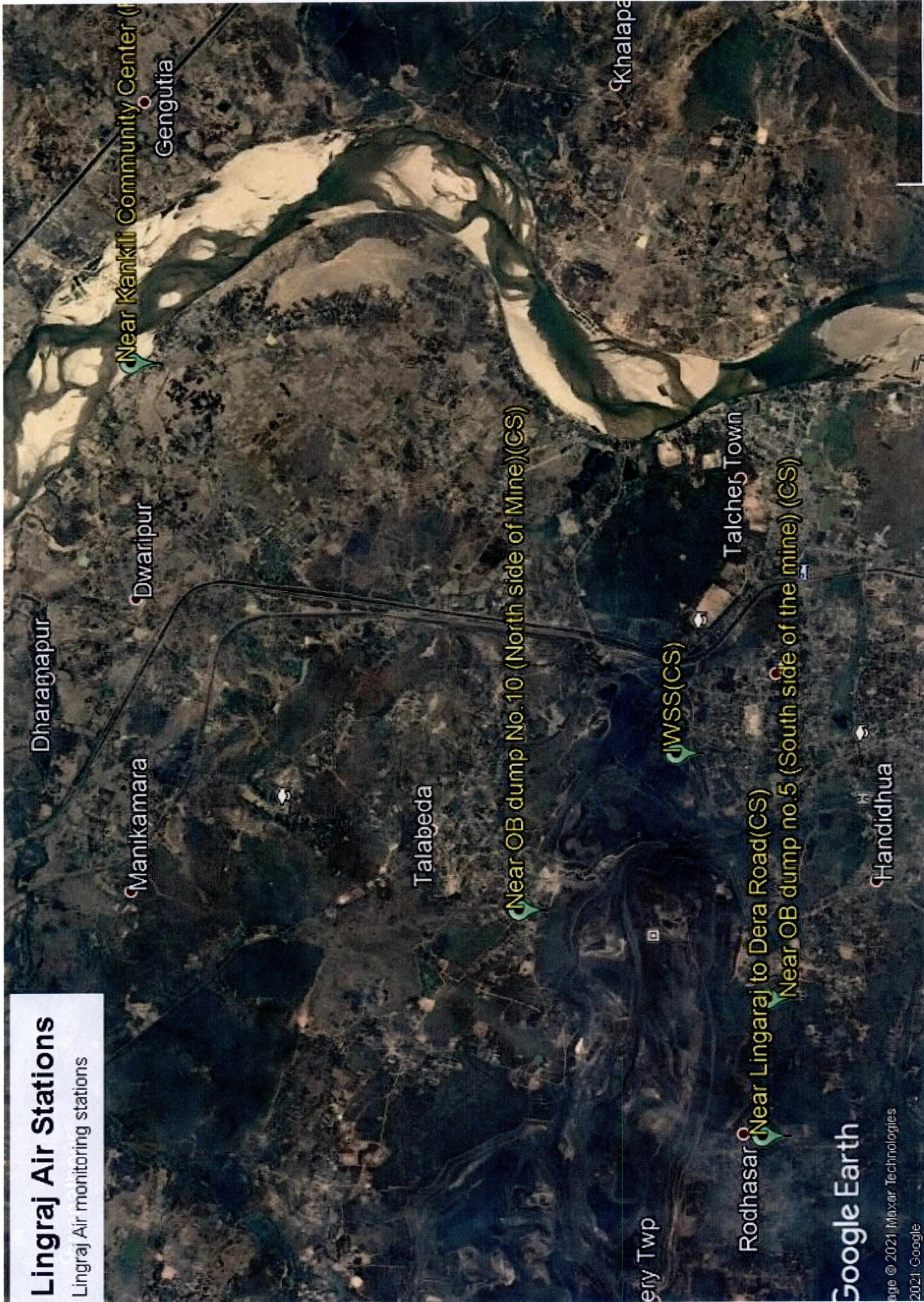
J. H. Das
Authorised Signatory
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MS/SM

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Env. Lab
CMPDI RI-VII
Bhubaneswar

Lingraj Air Stations

Lingraj Air monitoring stations



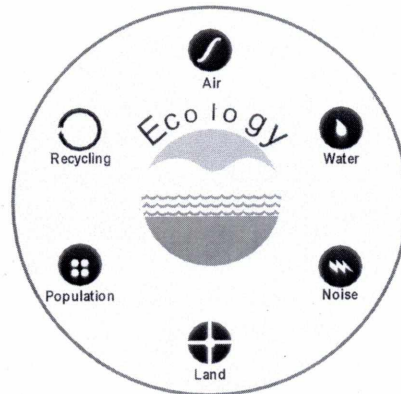
Job No.750001

**Environmental Monitoring Report
Of
Kaniha Area
For
July- 2021**

Talcher Coalfield



Mahanadi Coalfields Limited



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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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Test Report

AMBIENT AIR QUALITY DATA

Area :

Kaniha

(Compliance Station)

Project :

Kaniha OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
05-Jul-21	Near External OB Dump Jamania	191	111	45	11.43	29.63	Mining Activities	About 500m
05-Jul-21	North East Side of Project Office	219	128	58	14.96	26.86	Mining Activities	About 500m
05-Jul-21	West Of Mine Quarry	216	138	57	10.00	14.88	Mining Activities	About 500m
05-Jul-21	Near Jatra Padia Jarda	170	124	52	11.34	31.51	Mining Activities	About 500m
06-Jul-21	New Time Office-Near Z-patch	347	202	56	10.11	14.44	Mining Activities	About 500m
06-Jul-21	Project Office	193	120	50	12.47	17.00	Mining Activities	About 500m
06-Jul-21	Old Site Office	221	114	48	9.72	18.69	Mining Activities	About 500m
19-Jul-21	North East Side of Project Office	204	119	47	14.65	36.63	Mining Activities	About 500m
19-Jul-21	West Of Mine Quarry	203	103	49	9.68	25.8	Mining Activities	About 500m
19-Jul-21	Near Jatra Padia Jarda	186	105	49	21.68	36.13	Mining Activities	About 500m
20-Jul-21	New Time Office-Near Z-patch	219	137	48	13.66	17.51	Mining Activities	About 500m
20-Jul-21	Project Office	149	80	36	15.63	34.39	Mining Activities	About 500m
20-Jul-21	Old Site Office	244	137	50	16.89	38.51	Mining Activities	About 500m
20-Jul-21	Near External OB Dump Jamania	227	149	56	9.50	15.83	Mining Activities	About 500m

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BHUBANESWAR

24/8/21

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Bhubaneswar

MoEF Standards Notification dated 25th September, 2000	600	300		120	120
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Test Report

AMBIENT AIR QUALITY DATA

Area :

Kaniha

(Reference Station)

Project :

Kaniha OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
07-Jul-21	South Of Proposed Quarry Limit of KOCP	139	89	49	10.65	28.39	Mining Activities	About 500m
08-Jul-21	South Of Proposed Quarry Limit of KOCP	148	80	50	10.64	19.94	Mining Activities	About 500m
13-Jul-21	South Of Proposed Quarry Limit of KOCP	99	57	39	17.13	32.36	Mining Activities	About 500m
14-Jul-21	South Of Proposed Quarry Limit of KOCP	124	65	35	10.30	19.62	Mining Activities	About 500m
20-Jul-21	South Of Proposed Quarry Limit of KOCP	118	69	33	19.21	37.36	Mining Activities	About 500m
21-Jul-21	South Of Proposed Quarry Limit of KOCP	122	83	36	16.84	34.17	Mining Activities	About 500m
27-Jul-21	South Of Proposed Quarry Limit of KOCP	109	71	35	14.38	28.14	Mining Activities	About 500m
28-Jul-21	South Of Proposed Quarry Limit of KOCP	97	57	31	18.50	32.07	Mining Activities	About 500m

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*NAAQS,2009		100	60	80	80
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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Kaniha

Project	Kaniha OCP				
Monitoring Station	South of Proposed Quarry Limit of KOCP				
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
07-Jul-21	<20.0	5.82	<0.1	<1.0	<1.0
08-Jul-21	<20.0	6.12	<0.1	<1.0	<1.0
13-Jul-21	<20.0	4.56	<0.1	<1.0	<1.0
14-Jul-21	<20.0	6.09	<0.1	<1.0	<1.0
20-Jul-21	<20.0	4.46	<0.1	<1.0	<1.0
21-Jul-21	<20.0	3.70	<0.1	<1.0	<1.0
27-Jul-21	<20.0	3.55	<0.1	<1.0	<1.0
28-Jul-21	<20.0	3.84	<0.1	<1.0	<1.0
Standard	400 (24hours)	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

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TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Kaniha

PROJECT :

Kaniha OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
15-Jul-21	Telisingha Village	65.6	61.7
15-Jul-21	Near Jarda Village	63.8	59.8
15-Jul-21	Site Office	60.4	56.7
15-Jul-21	Patharmunda Village	67.6	62.4
24-Jul-21	Telisingha Village	69.9	65.3
24-Jul-21	Near Jarda Village	63.1	60.9
24-Jul-21	Site Office	63.4	60.3
24-Jul-21	Patharmunda Village	68.6	64.1

MoEF Standard Notification dated 25th September, 2000

6.00 AM -10.00 PM Leq 75dB(A)

10.00 PM -6.00 AM Leq 70dB(A)

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TABLE--

EFFLUENT QUALITY DATA

Area :

Kaniha

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

Project :

Kaniha OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
07-Jul-21	Clear Water Pond	7.80	<4.0	44	32		
07-Jul-21	Kansamunda Sump	7.87	<4.0	58	44		
07-Jul-21	Pre Sedimentation Pond	7.77	<4.0	42	28		
07-Jul-21	Z-Patch Sump	7.69	<4.0	40	28		
14-Jul-21	Clear Water Pond	7.78	<4.0	36	24		
14-Jul-21	Kansamunda Sump	7.93	<4.0	66	52		
14-Jul-21	Pre Sedimentation Pond	7.79	<4.0	38	24		
14-Jul-21	Z-Patch Sump	7.60	<4.0	36	24		
23-Jul-21	Clear Water Pond	7.58	<4.0	64	48		
23-Jul-21	Kansamunda Sump	7.51	<4.0	78	68		
23-Jul-21	Pre Sedimentation Pond	7.62	<4.0	58	40		
23-Jul-21	Z-Patch Sump	7.38	<4.0	88	80		
29-Jul-21	Clear Water Pond	7.63	<4.0	68	52		
29-Jul-21	Kansamunda Sump	7.47	<4.0	84	76		
29-Jul-21	Pre Sedimentation Pond	7.56	<4.0	52	36		
29-Jul-21	Z-Patch Sump	7.44	<4.0	80	72		

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MoEF Standard Notification dated 25th September, 2000 and MoEF Schedule VI, General standard for discharge of Environmental Pollutants Part A: Effluents	5.5-9.0	10	100	250	30
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Drinking Water Quality Data Kaniha Area

Project / OCP	Kaniha		Indian Drinking Standards (IS-10500):2012	
	Tube Well at Coal Analysis Lab	Jarda Village Well Water		
Monitoring Station				
Date of Sampling	14-Jul-2021	14-Jul-2021	Acceptable	Permissible
Colour(Hazen)	2	3	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	4	1	5
pH	7.24	7.22	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	380	444	200	600
Total Hardness (Ca CO₃)(mg/L)	268	352	200	600
Iron(mg/L)	<0.1	<0.1	1.0	No relaxation
Chloride(mg/L)	35.74	87.37	250	1000
Total Dissolve Solid(mg/L)	522	654	500	2000
Calcium(mg/L)	52.91	65.73	75	200
Copper(mg/L)	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	<0.04	0.1	0.3
Sulphate(mg/L)	44.27	6.18	200	400
Nitrate(mg/L)	2.75	<0.50	45	No relaxation
Fluoride(mg/L)	0.54	0.46	1	1.5
Arsenic(mg/L)	<0.005	<0.005	0.01	No relaxation
Lead(mg/L)	<0.005	<0.005	0.01	No relaxation
Zinc(mg/L)	0.17	0.06	5	15
Total Chromium (mg/L)	<0.01	<0.01	0.05	No relaxation
Boron(mg/L)	<0.10	<0.10	0.5	2.4
Cadmium(mg/L)	<0.001	<0.001	0.003	No relaxation

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Drinking Water Quality Data Kaniha Area

Project / OCP	Kaniha		Indian Drinking Standards (IS-10500):2012	
	Tube Well at Coal Analysis Lab	Jarda Village Well Water	Acceptable	Permissible
Monitoring Station				
Date of Sampling	14-Jul-2021	14-Jul-2021	Acceptable	Permissible
MPN (Index/100 ml)	11	7.8	—	—
Residual Free Chlorine(mg/L)	<0.2	<0.2	0.2	1.0

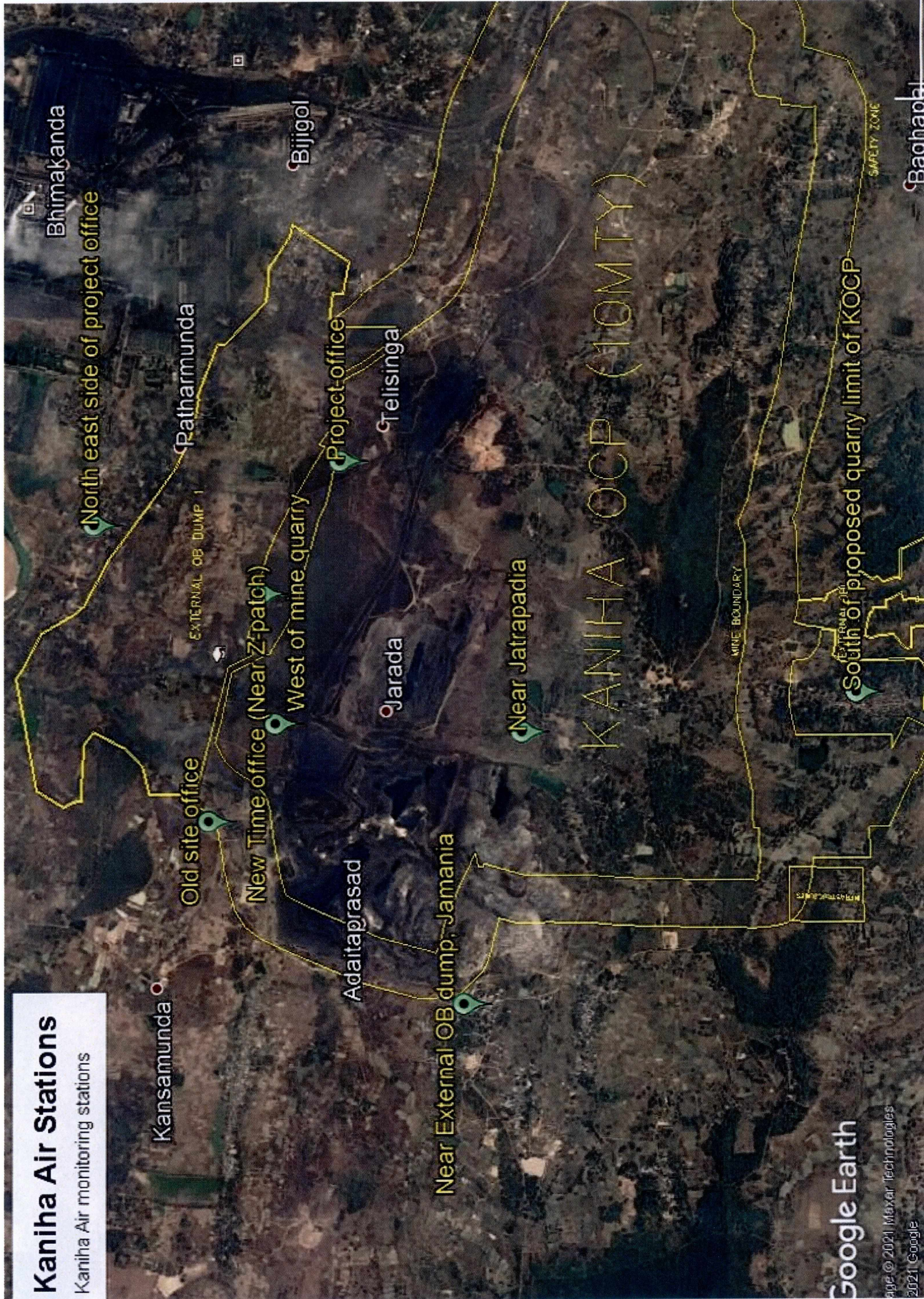
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Kaniha Air Stations

Kaniha Air monitoring stations



Google Earth

Job No.750001

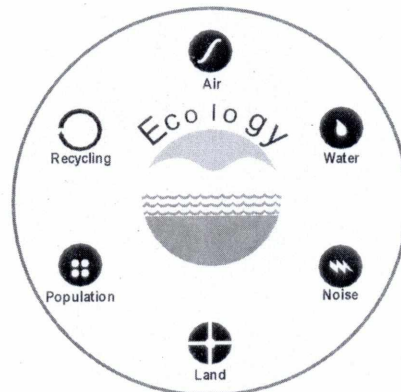
**Environmental Monitoring Report
Of
Hingula Area
For
July- 2021**

Talcher 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

AMBIENT AIR QUALITY DATA

Area :

Hingula

(Compliance Station)

Project :

Balram OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
01-Jul-21	South West of the Mine	295	193	63	11.66	16.44	Mining Operations And Coal Corridor	About 350m
01-Jul-21	Pump House Near Outsourcing Working Pach & Coal TR	296	187	46	15.74	36.23	Mining Operation And Coal Transportation Road	About 200m
19-Jul-21	South West of the Mine	261	149	57	19.77	32.95	Mining Operations And Coal Corridor	About 350m
20-Jul-21	Pump House Near Outsourcing Working Pach & Coal TR	241	135	41	23.83	29.21	Mining Operation And Coal Transportation Road	About 200m

Project :

Hingula OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
01-Jul-21	Time Office	304	171	40	10.64	20.69	Mining Operations and Haul Road	About 200m
01-Jul-21	South-West Side of Mine	406	222	54	15.50	24.60	Mining Operations	About 300m
15-Jul-21	Time Office	233	127	44	7.99	14.52	Mining Operations and Haul Road	About 200m
15-Jul-21	South-West Side of Mine	276	162	48	13.67	29.97	Mining Operations	About 300m

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MoEF Standards Notification dated 25th September, 2000	600	300		120	120
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Test Report

AMBIENT AIR QUALITY DATA

Area :

Hingula

(Reference Station)

Project :

Hingula OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
02-Jul-21	North East of the Mine, Solda Village	98	58	38	10.75	14.93	Coal Transportation Road	About 2km
02-Jul-21	North of the Mine,Purnapi,Kumunda Village	112	73	35	17.09	30.16	Mining Operations	About 3km
03-Jul-21	North East of the Mine, Solda Village	117	69	26	16.67	32.41	Coal Transportation Road	About 2km
08-Jul-21	North of the Mine,Purnapi,Kumunda Village	127	80	40	9.67	17.35	Mining Operations	About 3km
09-Jul-21	North of the Mine,Purnapi,Kumunda Village	134	88	34	11.95	20.68	Mining Operations	About 3km
09-Jul-21	North East of the Mine, Solda Village	107	60	32	20.12	38.57	Coal Transportation Road	About 2km
10-Jul-21	North East of the Mine, Solda Village	133	74	43	12.27	24.16	Coal Transportation Road	About 2km
15-Jul-21	North of the Mine,Purnapi,Kumunda Village	126	77	34	8.63	21.22	Mining Operations	About 3km
16-Jul-21	North of the Mine,Purnapi,Kumunda Village	130	81	33	13.60	39.67	Mining Operations	About 3km
16-Jul-21	North East of the Mine, Solda Village	125	74	38	15.00	15.52	Coal Transportation Road	About 2km
17-Jul-21	North of the Mine,Purnapi,Kumunda Village	121	69	39	16.46	30.86	Mining Operations	About 3km
17-Jul-21	North East of the Mine, Solda Village	129	82	42	23.21	29.75	Coal Transportation Road	About 2km
22-Jul-21	North of the Mine,Purnapi,Kumunda Village	95	59	29	17.42	34.21	Mining Operations	About 3km
23-Jul-21	North of the Mine,Purnapi,Kumunda Village	109	67	33	13.69	24.88	Mining Operations	About 3km
23-Jul-21	North East of the Mine, Solda Village	108	64	35	14.46	22.17	Coal Transportation Road	About 2km
24-Jul-21	North East of the Mine, Solda Village	113	76	27	16.26	21.30	Coal Transportation Road	About 2km

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AMBIENT AIR QUALITY DATA

Area :

Hingula

(Reference Station)

28-Jul-21	North of the Mine,Purnapi,Kumunda Village	94	53	26	14.28	28.34	Mining Operations	About 3km
29-Jul-21	North of the Mine,Purnapi,Kumunda Village	101	60	31	26.00	31.38	Mining Operations	About 3km
29-Jul-21	North East of the Mine, Solda Village	108	67	30	12.61	27.33	Coal Transportation Road	About 2km
30-Jul-21	North East of the Mine, Solda Village	117	52	27	17.50	13.72	Coal Transportation Road	About 2km

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AMBIENT AIR QUALITY DATA

Area :

Hingula

(Reference Station)

Project :

Balram OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
02-Jul-21	East of the Mine,Natedi Village	120	63	36	22.17	59.70	Coal Transportation Road	About 2km
02-Jul-21	North West of the Mine, Solda Village (Reported Only)	98	58	38	10.75	14.93	Coal Transportation Road	About 2km
03-Jul-21	North West of the Mine, Solda Village (Reported Only)	117	69	26	16.67	32.41	Coal Transportation Road	About 2km
03-Jul-21	East of the Mine,Natedi Village	139	76	45	12.87	29.62	Coal Transportation Road	About 2km
09-Jul-21	North West of the Mine, Solda Village (Reported Only)	107	60	32	20.12	38.57	Coal Transportation Road	About 2km
09-Jul-21	East of the Mine,Natedi Village	126	73	44	15.50	32.52	Coal Transportation Road	About 2km
10-Jul-21	North West of the Mine, Solda Village (Reported Only)	133	74	43	12.27	24.16	Coal Transportation Road	About 2km
10-Jul-21	East of the Mine,Natedi Village	132	83	41	16.24	39.48	Coal Transportation Road	About 2km
16-Jul-21	North West of the Mine, Solda Village (Reported Only)	125	74	38	15.00	15.52	Coal Transportation Road	About 2km
16-Jul-21	East of the Mine,Natedi Village	88	49	25	19.05	34.20	Coal Transportation Road	About 2km
17-Jul-21	North West of the Mine, Solda Village (Reported Only)	129	82	42	23.21	29.75	Coal Transportation Road	About 2km
17-Jul-21	East of the Mine,Natedi Village	95	55	23	16.86	26.09	Coal Transportation Road	About 2km
23-Jul-21	North West of the Mine, Solda Village (Reported Only)	108	64	35	14.46	22.17	Coal Transportation Road	About 2km
23-Jul-21	East of the Mine,Natedi Village	131	75	33	18.05	31.13	Coal Transportation Road	About 2km
24-Jul-21	North West of the Mine, Solda Village (Reported Only)	113	76	27	16.26	21.30	Coal Transportation Road	About 2km
24-Jul-21	East of the Mine,Natedi Village	124	78	35	13.65	24.43	Coal Transportation Road	About 2km
29-Jul-21	East of the Mine,Natedi Village	108	74	24	13.94	25.17	Coal Transportation Road	About 2km

K. Tanwaj
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AMBIENT AIR QUALITY DATA

Area :

Hingula

(Reference Station)

29-Jul-21	North West of the Mine, Solda Village (Reported Only)	108	67	30	12.61	27.33	Coal Transportation Road	About 2km
30-Jul-21	East of the Mine, Natedi Village	140	80	45	12.85	25.12	Coal Transportation Road	About 2km
30-Jul-21	North West of the Mine, Solda Village (Reported Only)	117	52	27	17.50	13.72	Coal Transportation Road	About 2km

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*NAAQS, 2009

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

Area:Hingula

Project	Hingula OCP				
Monitoring Station	North of the Mine, Purnapi, Kumunda Village				
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
02-Jul-21	<20.0	5.72	<0.1	<1.0	<1.0
08-Jul-21	<20.0	3.78	<0.1	<1.0	<1.0
09-Jul-21	<20.0	4.26	<0.1	<1.0	<1.0
15-Jul-21	<20.0	4.54	<0.1	<1.0	<1.0
16-Jul-21	<20.0	3.89	<0.1	<1.0	<1.0
17-Jul-21	<20.0	3.76	<0.1	<1.0	<1.0
22-Jul-21	<20.0	4.12	<0.1	<1.0	<1.0
23-Jul-21	<20.0	3.18	<0.1	<1.0	<1.0
28-Jul-21	<20.0	4.20	<0.1	<1.0	<1.0
29-Jul-21	<20.0	4.52	<0.1	<1.0	<1.0
Standard	400(24hours)	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area:Hingula

Project	Hingula OCP				
Monitoring Station	North East of the Mine, Solada Village				
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
02-Jul-21	<20.0	5.23	<0.1	<1.0	<1.0
03-Jul-21	<20.0	4.86	<0.1	<1.0	<1.0
09-Jul-21	<20.0	3.73	<0.1	<1.0	<1.0
10-Jul-21	<20.0	2.94	<0.1	<1.0	<1.0
16-Jul-21	<20.0	4.15	<0.1	<1.0	<1.0
17-Jul-21	<20.0	5.26	<0.1	<1.0	<1.0
23-Jul-21	<20.0	5.36	<0.1	<1.0	<1.0
24-Jul-21	<20.0	4.76	<0.1	<1.0	<1.0
29-Jul-21	<20.0	4.84	<0.1	<1.0	<1.0
30-Jul-21	<20.0	3.72	<0.1	<1.0	<1.0
Standard	400(24hours)	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area:Hingula

Project	Balram OCP				
Monitoring Station	East of the Mine, Natedi Village				
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
02-Jul-21	<20.0	3.76	<0.1	<1.0	<1.0
03-Jul-21	<20.0	2.64	<0.1	<1.0	<1.0
09-Jul-21	<20.0	3.86	<0.1	<1.0	<1.0
10-Jul-21	<20.0	2.94	<0.1	<1.0	<1.0
16-Jul-21	<20.0	6.15	<0.1	<1.0	<1.0
17-Jul-21	<20.0	4.79	<0.1	<1.0	<1.0
23-Jul-21	<20.0	3.68	<0.1	<1.0	<1.0
24-Jul-21	<20.0	4.52	<0.1	<1.0	<1.0
29-Jul-21	<20.0	3.66	<0.1	<1.0	<1.0
30-Jul-21	<20.0	4.89	<0.1	<1.0	<1.0
Standard	400(24hours)	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area:Hingula

Project	Balram OCP				
Monitoring Station	North West of the Mine, Solada Village (Reported Only)				
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
02-Jul-21	<20.0	5.23	<0.1	<1.0	<1.0
03-Jul-21	<20.0	4.86	<0.1	<1.0	<1.0
09-Jul-21	<20.0	3.73	<0.1	<1.0	<1.0
10-Jul-21	<20.0	2.94	<0.1	<1.0	<1.0
16-Jul-21	<20.0	4.15	<0.1	<1.0	<1.0
17-Jul-21	<20.0	5.26	<0.1	<1.0	<1.0
23-Jul-21	<20.0	5.36	<0.1	<1.0	<1.0
24-Jul-21	<20.0	4.76	<0.1	<1.0	<1.0
29-Jul-21	<20.0	4.84	<0.1	<1.0	<1.0
30-Jul-21	<20.0	3.72	<0.1	<1.0	<1.0
Standard	400(24hours)	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

A. Attanazik

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CMPDI, RI-VII
Bhubaneswar**



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TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Hingula

PROJECT :

Hingula OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
14-Jul-21	South West Side of the Mine	65.1	60.8
14-Jul-21	North East of the Mine, Solda Village	56.8	53.9
14-Jul-21	North of the Mine, Purnapi Kumunda Village	59.9	57.5
14-Jul-21	Time Office	67.3	64.8
24-Jul-21	South West Side of the Mine	69.7	65.3
24-Jul-21	North East of the Mine, Solda Village	57.8	54.9
24-Jul-21	North of the Mine, Purnapi Kumunda Village	58.6	55.2
24-Jul-21	Time Office	70.5	66.7

MoEF Standard Notification dated 25th September, 2000

6.00 AM -10.00 PM Leq 75dB(A)

10.00 PM -6.00 AM Leq 70dB(A)

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TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Hingula

PROJECT :

Balaram OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
14-Jul-21	Backfilled Area Near Dozer Shed	67.6	64.1
14-Jul-21	Pump House Near Outsourcing Working Patch&Coal TR	68.6	65.8
14-Jul-21	Near Project Office Balram OCP	66.8	65.9
14-Jul-21	South West of the Mine	65.6	60.8
24-Jul-21	Backfilled Area Near Dozer Shed	70.3	66.7
24-Jul-21	Pump House Near Outsourcing Working Patch&Coal TR	67.4	64.2
24-Jul-21	Near Project Office Balram OCP	66.2	62.1
24-Jul-21	South West of the Mine	69.8	65.5

MoEF Standard Notification dated 25th September, 2000

6.00 AM -10.00 PM Leq 75dB(A)

10.00 PM -6.00 AM Leq 70dB(A)

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TABLE--

EFFLUENT QUALITY DATA

Area :

Hingula

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

Project :

Balram OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
14-Jul-21	Inlet of O & G Trap	8.07	<4.0	40	28		
14-Jul-21	Outlet of O & G Trap	8.10	<4.0	32	20		
14-Jul-21	STP Inlet of Balram Colony	7.93		48		<2.0	
14-Jul-21	STP Outlet of Balram Colony	7.99		40		<2.0	
30-Jul-21	STP Outlet of Balram Colony	7.03		38		<2.0	

Project :

Hingula OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
14-Jul-21	Inlet of O & G trap	8.03	<4.0	44	32		
14-Jul-21	Outlet of O & G trap	8.08	<4.0	36	24		

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24/3W

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 Hingula Area

Project / OCP	Hingula OCP			Indian Drinking Standards (IS-10500):2012	
	Time Office Water	Gopalprasad Village Bore Well Water	Kumunda Village Bore Well Water	Acceptable	Permissible
Date of Sampling	1-Jul-2021	1-Jul-2021	1-Jul-2021	Acceptable	Permissible
Colour(Hazen)	2	1	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	3	2	1	1	5
pH	6.91	7.06	7.01	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	156	292	296	200	600
Total Hardness (Ca CO ₃)(mg/L)	188	196	208	200	600
Iron(mg/L)	<0.1	<0.1	<0.1	1.0	No relaxation
Chloride(mg/L)	27.8	35.74	33.76	250	1000
Total Dissolve Solid(mg/L)	324	388	392	500	2000
Calcium(mg/L)	49.70	43.29	46.49	75	200
Copper(mg/L)	<0.03	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	0.10	0.05	0.1	0.3
Sulphate(mg/L)	59.85	1.18	1.47	200	400
Nitrate(mg/L)	1.52	<0.5	<0.5	45	No relaxation
Fluoride(mg/L)	0.53	<0.30	<0.30	1	1.5
Arsenic(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Lead(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Zinc(mg/L)	0.15	0.22	0.25	5	15
Total Chromium (mg/L)	<0.01	<0.01	<0.01	0.05	No relaxation
Boron(mg/L)	<0.10	<0.10	<0.10	0.5	2.4
Cadmium(mg/L)	<0.001	<0.001	<0.001	0.003	No relaxation

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Drinking Water Quality Data Hingula Area

Project / OCP	Hingula OCP			Indian Drinking Standards (IS-10500):2012	
	Time Office Water	Gopalprasad Village Bore Well Water	Kumunda Village Bore Well Water		
Monitoring Station					
Date of Sampling	1-Jul-2021	1-Jul-2021	1-Jul-2021	Acceptable	Permissible
MPN (Index/100 ml)	2	3.6	14	-	-
Residual Free Chlorine(mg/L)	<0.2	<0.2	<0.2	0.2	1.0

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Drinking Water Quality Data Hingula Area

Project / OCP	Balaram OCP			Indian Drinking Standards (IS-10500):2012	
	Danara Village Borewell Water	Balaram Colony Tap Water	Nakeipasi Village Bore Well Water		
Monitoring Station					
Date of Sampling	13-Jul-2021	13-Jul-2021	13-Jul-2021	Acceptable	Permissible
MPN (Index/100 ml)	<1.8	2	6	–	–
Residual Free Chlorine(mg/L)	<0.2	<0.2	<0.2	0.2	1.0

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Drinking Water Quality Data Hingula Area

Project / OCP	Balaram OCP			Indian Drinking Standards (IS-10500):2012	
	Danara Village Borewell Water	Balaram Colony Tap Water	Nakeipasi Village Bore Well Water		
Monitoring Station					
Date of Sampling	13-Jul-2021	13-Jul-2021	13-Jul-2021	Acceptable	Permissible
Colour(Hazen)	2	1	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	3	1	2	1	5
pH	7.02	7.29	6.36	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	284	68	264	200	600
Total Hardness (Ca CO₃)(mg/L)	292	376	432	200	600
Iron(mg/L)	<0.1	<0.1	<0.1	1.0	No relaxation
Chloride(mg/L)	65.53	17.87	144.96	250	1000
Total Dissolve Solid(mg/L)	542	530	802	500	2000
Calcium(mg/L)	76.95	109.02	105.81	75	200
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
Sulphate(mg/L)	82.94	192.80	63.97	200	400
Nitrate(mg/L)	11.35	<0.50	39.78	45	No relaxation
Fluoride(mg/L)	0.80	1.28	0.35	1	1.5
Arsenic(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Lead(mg/L)	<0.005	<0.005	<0.005	0.01	No relaxation
Zinc(mg/L)	0.13	0.05	<0.04	5	15
Total Chromium (mg/L)	<0.01	<0.01	<0.01	0.05	No relaxation
Boron(mg/L)	<0.10	<0.10	<0.10	0.5	2.4
Cadmium(mg/L)	<0.001	<0.001	<0.001	0.003	No relaxation

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Balram Air Stations

Balram Air monitoring stations

Solada North west of the mine, Solada village (RS)

Satyabadipur

Padmabatipur

Puruna Gaan Village

Nua Gaan Sahi

Kalam Chhuin

Anantabereni

Hensamul

Pump House near Outsourcing Working Patch & Coal Transport Road (CS)

South west of the Mine (CS)

Odisha

Danara

Ambapal

Jambubahali

Natada

Singida

East of the mine, Natedi Village (RS)

Google Earth

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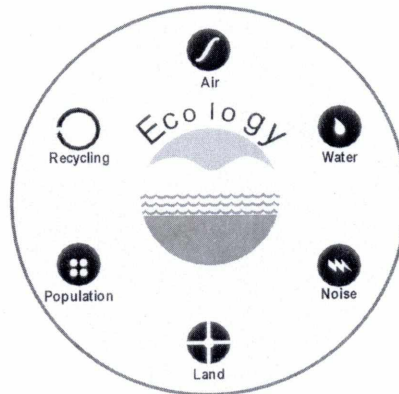
**Environmental Monitoring Report
Of
Talcher Area
For
July- 2021**

Talcher 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

AMBIENT AIR QUALITY DATA

Area :

Talcher

(Compliance Station)

Project :

Talcher Colliery

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
12-Jul-21	Near Canteen Talcher Colliery	141	87	32	12.15	16.19	Locl Transportation	About 500m
12-Jul-21	Officer Club, Talcher Area	86	50	27	10.61	25.65	Mining Activities, Ananta, Lingaraj &Bharatpur OCP	About 1000m
27-Jul-21	Near Canteen Talcher Colliery	131	69	27	14.42	21.03	Locl Transportation	About 500m
27-Jul-21	Officer Club, Talcher Area	107	61	25	18.39	28.84	Mining Activities, Ananta, Lingaraj &Bharatpur OCP	About 1000m

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MoEF Standards Notification dated 25th September, 2000	600	300		120	120
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Test Report

AMBIENT AIR QUALITY DATA

Area :

Talcher

(Compliance Station)

Project :

Nandira Colliery

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
01-Jul-21	Project Office	169	86	37	13.11	19.66	Local Transportation, CHP	About 500m
01-Jul-21	Sub Station	175	109	34	20.55	34.25	Transportation & Railway Sidings of BOCP	About 500m
15-Jul-21	Project Office	115	73	39	11.76	20.35	Local Transportation, CHP	About 500m
15-Jul-21	Sub Station	145	89	32	19.09	30.59	Transportation & Railway Sidings of BOCP	About 500m

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MoEF Standards Notification dated 25th September, 2000	600	300		120	120
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Test Report

AMBIENT AIR QUALITY DATA

Area :

Talcher

(Compliance Station)

Project :

Deulbera Colliery

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
07-Jul-21	IWSS, Talcher (Reported Only)	291	177	49	12.87	21.45	Coal Transportation Road, Railway Siding, Coal S.Y	About 500m
22-Jul-21	IWSS, Talcher (Reported Only)	246	130	46	13.34	23.20	Coal Transportation Road, Railway Siding, Coal S.Y	About 500m

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MoEF Standards Notification dated 25th
September, 2000

600	300		120	120
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Test Report

AMBIENT AIR QUALITY DATA

Area :

Talcher

(Compliance Station)

Project :

Handidhua Colliery

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
12-Jul-21	Manager's Office	187	107	42	14.09	26.83	Local Transportation, CHP	About 500m
27-Jul-21	Manager's Office	164	96	33	13.11	21.01	Local Transportation, CHP	About 500m

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MoEF Standards Notification dated 25th
September, 2000

600	300		120	120
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Test Report

AMBIENT AIR QUALITY DATA

Area :

Talcher

(Compliance Station)

Project :

Mandapal Sand Mine

(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
10-Jul-21	Near Mandapal Chowk	Machine	break	down	-	-	Mining Activity	Less than 500m
10-Jul-21	Near Pachismeshwar Temple	129	78	34	16.10	25.93	Mining Activity	Less than 500m
28-Jul-21	Near Mandapal Chowk	93	56	30	17.67	28.40	Mining Activity	Less than 500m
28-Jul-21	Near Pachismeshwar Temple	105	51	28	17.47	23.51	Mining Activity	Less than 500m

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MoEF Standards Notification dated 25th September, 2000	600	300		120	120
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Test Report

AMBIENT AIR QUALITY DATA

Area :

Talcher

(Compliance Station)

Project :

Kakudi & kishoripal sand mine

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
12-Jul-21	Near Kishoripal Village	167	95	39	14.22	24.55	Domestic Cooking, Transportation Road	About 500m
27-Jul-21	Near Kishoripal Village	167	105	42	11.82	17.66	Domestic Cooking, Transportation Road	About 500m

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24/9/21

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MoEF Standards Notification dated 25th September, 2000	600	300		120	120
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Test Report

AMBIENT AIR QUALITY DATA

Area :

Talcher

(Reference Station)

Project :

Nandira Colliery

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
02-Jul-21	Nandira Colony	78	50	22	10.47	13.95	Local Transportation, Mining Activities etc.	About 500m
02-Jul-21	Near Natedi Village (Reported Only)	120	63	36	22.17	59.70	Coal Transportation Road	About 2km
03-Jul-21	Near Natedi Village (Reported Only)	139	76	45	12.87	29.62	Coal Transportation Road	About 2km
03-Jul-21	Nandira Colony	99	59	25	9.49	16.40	Local Transportation, Mining Activities etc.	About 500m
08-Jul-21	Nandira Colony	121	63	29	14.38	28.41	Local Transportation, Mining Activities etc.	About 500m
09-Jul-21	Near Natedi Village (Reported Only)	126	73	44	15.50	32.52	Coal Transportation Road	About 2km
09-Jul-21	Nandira Colony	119	70	33	17.12	26.49	Local Transportation, Mining Activities etc.	About 500m
10-Jul-21	Near Natedi Village (Reported Only)	132	83	41	16.24	39.48	Coal Transportation Road	About 2km
15-Jul-21	Nandira Colony	103	56	29	12.33	19.13	Local Transportation, Mining Activities etc.	About 500m
16-Jul-21	Nandira Colony	116	50	24	15.64	26.93	Local Transportation, Mining Activities etc.	About 500m
16-Jul-21	Near Natedi Village (Reported Only)	88	49	25	19.05	34.20	Coal Transportation Road	About 2km
17-Jul-21	Near Natedi Village (Reported Only)	95	55	23	16.86	26.09	Coal Transportation Road	About 2km
22-Jul-21	Nandira Colony	92	63	31	15.74	22.26	Local Transportation, Mining Activities etc.	About 500m
23-Jul-21	Nandira Colony	98	57	27	11.96	18.52	Local Transportation, Mining Activities etc.	About 500m
23-Jul-21	Near Natedi Village (Reported Only)	131	75	33	18.05	31.13	Coal Transportation Road	About 2km
24-Jul-21	Near Natedi Village (Reported Only)	124	78	35	13.65	24.43	Coal Transportation Road	About 2km
29-Jul-21	Nandira Colony	147	84	36	15.74	22.62	Local Transportation, Mining Activities etc.	About 500m
29-Jul-21	Near Natedi Village (Reported Only)	108	74	24	13.94	25.17	Coal Transportation Road	About 2km
30-Jul-21	Near Natedi Village (Reported Only)	140	80	45	12.85	25.12	Coal Transportation Road	About 2km

Tattarajit
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*N.A. 03, 2009

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

Area: Talcher

Project	Nandira				
Monitoring Station	East of the Mine, Natedi Village (Reported)				
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
02-Jul-21	<20.0	3.76	<0.1	<1.0	<1.0
03-Jul-21	<20.0	2.64	<0.1	<1.0	<1.0
09-Jul-21	<20.0	3.86	<0.1	<1.0	<1.0
10-Jul-21	<20.0	2.94	<0.1	<1.0	<1.0
16-Jul-21	<20.0	6.15	<0.1	<1.0	<1.0
17-Jul-21	<20.0	4.79	<0.1	<1.0	<1.0
23-Jul-21	<20.0	3.68	<0.1	<1.0	<1.0
24-Jul-21	<20.0	4.52	<0.1	<1.0	<1.0
29-Jul-21	<20.0	3.66	<0.1	<1.0	<1.0
30-Jul-21	<20.0	4.89	<0.1	<1.0	<1.0
Standard	400(24hours)	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Talcher

3.Project	Nandira				
Monitoring Station	Nandira Colony				
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
02-Jul-21	<20.0	4.05	<0.1	<1.0	<1.0
03-Jul-21	<20.0	3.78	<0.1	<1.0	<1.0
08-Jul-21	<20.0	4.23	<0.1	<1.0	<1.0
09-Jul-21	<20.0	5.36	<0.1	<1.0	<1.0
15-Jul-21	<20.0	4.17	<0.1	<1.0	<1.0
16-Jul-21	<20.0	3.08	<0.1	<1.0	<1.0
22-Jul-21	<20.0	2.98	<0.1	<1.0	<1.0
23-Jul-21	<20.0	4.52	<0.1	<1.0	<1.0
29-Jul-21	<20.0	4.53	<0.1	<1.0	<1.0
Standard	400(24hours)	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

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TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Talcher

PROJECT :

Talcher Colliery

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
15-Jul-21	GM Office, Talcher Area	59.8	55.7
15-Jul-21	Near Canteen, Talcher Colliery	58.6	54.6
23-Jul-21	GM Office, Talcher Area	58.6	55.1
23-Jul-21	Near Canteen, Talcher Colliery	57.3	54.8

MoEF Standard Notification dated 25th September, 2000

6.00 AM -10.00 PM Leq 75dB(A)

10.00 PM -6.00 AM Leq 70dB(A)

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BHUBANESWAR

MS/SCM
O. I. C.
Env. Lab
CMPDI, RI-VII
Bhubaneswar



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A Tata Consultancy Company

TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Talcher

PROJECT :

Nandira Colliery

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
15-Jul-21	Sub Station, Nandira Colliery	65.8	60.9
15-Jul-21	Project Office	60.4	57.4
24-Jul-21	Sub Station, Nandira Colliery	69.7	67.3
24-Jul-21	Project Office	67.3	63.2

MoEF Standard Notification dated 25th September, 2000

6.00 AM -10.00 PM Leq 75dB(A)

10.00 PM -6.00 AM Leq 70dB(A)

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A Min. Karm. Company

TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Talcher

PROJECT :

Deulbera Colliery

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
15-Jul-21	Manager's Office	58.6	53.6
23-Jul-21	Manager's Office	55.5	53.8

MoEF Standard Notification dated 25th September, 2000

6.00 AM -10.00 PM Leq 75dB(A)

10.00 PM -6.00 AM Leq 70dB(A)

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Bhubaneswar



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A Tata Steel Company

TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Talcher

PROJECT :

Mandapal Sand Mine

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
14-Jul-21	Near Gopinathpur Village	59.4	52.6
24-Jul-21	Near Gopinathpur Village	56.8	52.5

MoEF Standard Notification dated 25th September, 2000

6.00 AM -10.00 PM Leq 75dB(A)

10.00 PM -6.00 AM Leq 70dB(A)

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A Maa Kadam Company

TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Talcher

PROJECT :

Kakudi & Kishoripal Sand Mine

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
14-Jul-21	Near Kishoripal Village	56.8	53.7
24-Jul-21	Near Kishoripal Village	59.3	55.8

MoEF Standard Notification dated 25th September, 2000

6.00 AM -10.00 PM Leq 75dB(A)

10.00 PM -6.00 AM Leq 70dB(A)

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TABLE--

EFFLUENT QUALITY DATA

Area :

Talcher

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

Project :

Talcher Colliery

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
14-Jul-21	Talcher Colliery Sedimentation Tank Discharge	6.33	<4.0	34	24		
30-Jul-21	Talcher Colliery Sedimentation Tank Discharge	7.85	<4.0	36	24		

Kattarail

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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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TABLE--

EFFLUENT QUALITY DATA

Area :

Talcher

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

Project :

Nandira Colliery

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
14-Jul-21	Nandira Colliery Sedimentation Tank Discharge	7.11	<4.0	32	20		
30-Jul-21	Nandira Colliery Sedimentation Tank Discharge	7.15	<4.0	26	20		

Hattarai

Authorised Signatory
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BHUBANESWAR

24/8/21

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Env. Lab
CMPDI, RI-VII
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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A Min. Rates Company

TABLE--

EFFLUENT QUALITY DATA

Area :

Talcher

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

Project :

Deulbera Colliery

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
14-Jul-21	Deulbera Colliery Mine Discharge at Pit Top	6.56	<4.0	38	28		
14-Jul-21	Ranipark Submersible Pump	6.88	<4.0	28	20		
30-Jul-21	Deulbera Colliery Mine Discharge at Pit Top	7.06	<4.0	42	28		
30-Jul-21	Ranipark Submersible Pump	7.09	<4.0	46	32		

K. Pattanayak

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

[Signature]

**O. I. C.
Env. Lab
CMPDI, RI-VII
Bhubaneswar**

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

EFFLUENT QUALITY DATA

Area :

Talcher

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

Project :

Handidhwa Colliery

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
14-Jul-21	19X Cut Road Bore Hole Point	6.85	<4.0	42	32		
14-Jul-21	Handidhwa Colliery Mine Discharge	6.68	<4.0	40	20		
30-Jul-21	19X Cut Road Bore Hole Point	7.24	<4.0	30	16		
30-Jul-21	Handidhwa Colliery Mine Discharge	7.18	<4.0	26	16		

Kattawalk

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BHUBANESWAR

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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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Drinking Water Quality Data Talcher Area

Project / OCP	Talcher U/G		Indian Drinking Standards (IS-10500):2012	
	Tap-Water, GM Office	Canteen Tap- Water, Talcher Colliery		
Monitoring Station				
Date of Sampling	1-Jul-2021	1-Jul-2021	Acceptable	Permissible
Colour(Hazen)	1	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	4	3	1	5
pH	6.96	6.93	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	36	40	200	600
Total Hardness (Ca CO ₃)(mg/L)	72	60	200	600
Iron(mg/L)	<0.1	<0.1	1.0	No relaxation
Chloride(mg/L)	9.93	45.67	250	1000
Total Dissolve Solid(mg/L)	108	112	500	2000
Calcium(mg/L)	17.64	14.43	75	200
Copper(mg/L)	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	<0.04	0.1	0.3
Sulphate(mg/L)	33.82	33.24	200	400
Nitrate(mg/L)	0.89	0.97	45	No relaxation
Fluoride(mg/L)	0.30	<0.30	1	1.5
Arsenic(mg/L)	<0.005	<0.005	0.01	No relaxation
Lead(mg/L)	<0.005	<0.005	0.01	No relaxation
Zinc(mg/L)	0.15	0.08	5	15
Total Chromium (mg/L)	<0.01	<0.01	0.05	No relaxation
Boron(mg/L)	<0.10	<0.10	0.5	2.4
Cadmium(mg/L)	<0.001	<0.001	0.003	No relaxation

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Drinking Water Quality Data Talcher Area

Project / OCP	Talcher U/G		Indian Drinking Standards (IS-10500):2012	
	Tap-Water, GM Office	Canteen Tap- Water, Talcher Colliery		
Monitoring Station				
Date of Sampling	1-Jul-2021	1-Jul-2021	Acceptable	Permissible
MPN (Index/100 ml)	4	5.5	–	–
Residual Free Chlorine(mg/L)	<0.2	<0.2	0.2	1.0

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Drinking Water Quality Data Talcher Area

Project / OCP Monitoring Station	Nandira U/G		Indian Drinking Standards (IS-10500):2012	
	Canteen Tap- Water, Nandira Colliery	Pit Top Tap Water, Nandira Colliery	Acceptable	Permissible
Date of Sampling	1-Jul-2021	1-Jul-2021	Acceptable	Permissible
Colour(Hazen)	1	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	2	1	5
pH	7.21	7.25	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	60	64	200	600
Total Hardness (Ca CO ₃)(mg/L)	172	172	200	600
Iron(mg/L)	<0.1	<0.1	1.0	No relaxation
Chloride(mg/L)	11.91	13.9	250	1000
Total Dissolve Solid(mg/L)	278	284	500	2000
Calcium(mg/L)	43.29	41.68	75	200
Copper(mg/L)	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	<0.04	0.1	0.3
Sulphate(mg/L)	106.18	119.27	200	400
Nitrate(mg/L)	<0.5	<0.50	45	No relaxation
Fluoride(mg/L)	0.35	0.34	1	1.5
Arsenic(mg/L)	<0.005	<0.005	0.01	No relaxation
Lead(mg/L)	<0.005	<0.005	0.01	No relaxation
Zinc(mg/L)	0.04	<0.04	5	15
Total Chromium (mg/L)	<0.01	<0.01	0.05	No relaxation
Boron(mg/L)	<0.10	<0.10	0.5	2.4
Cadmium(mg/L)	<0.001	<0.001	0.003	No relaxation

Signature

Signature
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Drinking Water Quality Data Talcher Area

Project / OCP	Nandira U/G		Indian Drinking Standards (IS-10500):2012	
	Canteen Tap- Water, Nandira Colliery	Pit Top Tap Water, Nandira Colliery		
Monitoring Station				
Date of Sampling	1-Jul-2021	1-Jul-2021	Acceptable	Permissible
MPN (Index/100 ml)	6.8	4	-	-
Residual Free Chlorine(mg/L)	<0.2	<0.2	0.2	1.0

Fallout
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Drinking Water Quality Data Talcher Area

Project / OCP	Deulbera U/G	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	Deulbera Manager Office Tap Water	Acceptable	Permissible
Date of Sampling	1-Jul-2021	Acceptable	Permissible
Colour(Hazen)	2	5	15
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	4	1	5
pH	6.78	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	168	200	600
Total Hardness (Ca CO ₃)(mg/L)	212	200	600
Iron(mg/L)	<0.1	0.3	No relaxation
Chloride(mg/L)	13.9	250	1000
Total Dissolve Solid(mg/L)	372	500	2000
Calcium(mg/L)	51.30	75	200
Copper(mg/L)	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	0.1	0.3
Sulphate(mg/L)	83.53	200	400
Nitrate(mg/L)	3.38	45	No relaxation
Fluoride(mg/L)	0.37	1	1.5
Arsenic(mg/L)	<0.005	0.01	0.05
Lead(mg/L)	<0.005	0.01	No relaxation
Zinc(mg/L)	<0.04	5	15
Total Chromium (mg/L)	<0.01	0.05	No relaxation
Boron(mg/L)	<0.10	0.5	1.0
Cadmium(mg/L)	<0.001	0.003	No relaxation

Kaifanik
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Drinking Water Quality Data Talcher Area

Project / OCP	Deulbera U/G	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	Deulbera Manager Office Tap Water		
Date of Sampling	1-Jul-2021	Acceptable	Permissible
MPN (Index/100 ml)	2	—	—
Residual Free Chlorine(mg/L)	<0.2	0.2	1.0

Kattawail

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BHUBANESWAR

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Drinking Water Quality Data Talcher Area

Project / OCP	Handhidhua Colliery	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	Pit Top Tap Water	Acceptable	Permissible
Date of Sampling	1-Jul-2021	Acceptable	Permissible
Colour(Hazen)	2	5	15
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	1	5
pH	6.87	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	112	200	600
Total Hardness (Ca CO ₃)(mg/L)	280	200	600
Iron(mg/L)	<0.1	1.0	No relaxation
Chloride(mg/L)	131.06	250	1000
Total Dissolve Solid(mg/L)	496	500	2000
Calcium(mg/L)	101.00	75	200
Copper(mg/L)	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	0.1	0.3
Sulphate(mg/L)	62.06	200	400
Nitrate(mg/L)	3.01	45	No relaxation
Fluoride(mg/L)	0.39	1	1.5
Arsenic(mg/L)	<0.005	0.01	No relaxation
Lead(mg/L)	<0.005	0.01	No relaxation
Zinc(mg/L)	0.05	5	15
Total Chromium (mg/L)	<0.01	0.05	No relaxation
Boron(mg/L)	<0.10	0.5	2.4
Cadmium(mg/L)	<0.001	0.003	No relaxation

Hattarwaik
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BHUBANESWAR

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Env. Lab
CMPDI, RI-VII
Bhubaneswar



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Drinking Water Quality Data Talcher Area

Project / OCP	Handhidhua Colliery	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	Pit Top Tap Water	Acceptable	Permissible
Date of Sampling	1-Jul-2021	Acceptable	Permissible
MPN (Index/100 ml)	4	–	–
Residual Free Chlorine(mg/L)	<0.2	0.2	1.0

Talcher Air Stations

Talcher Air monitoring stations

Rodhasar

Near canteen, TC

GM office, TA

Pond

Google Earth

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Nandira Air Stations

Nandira Air monitoring stations

Datta

Kata Bandina

Jambubahali

Singda

Natedi

Substation, Nandira

Project office

Near natedi

Nandira colony

Jorada

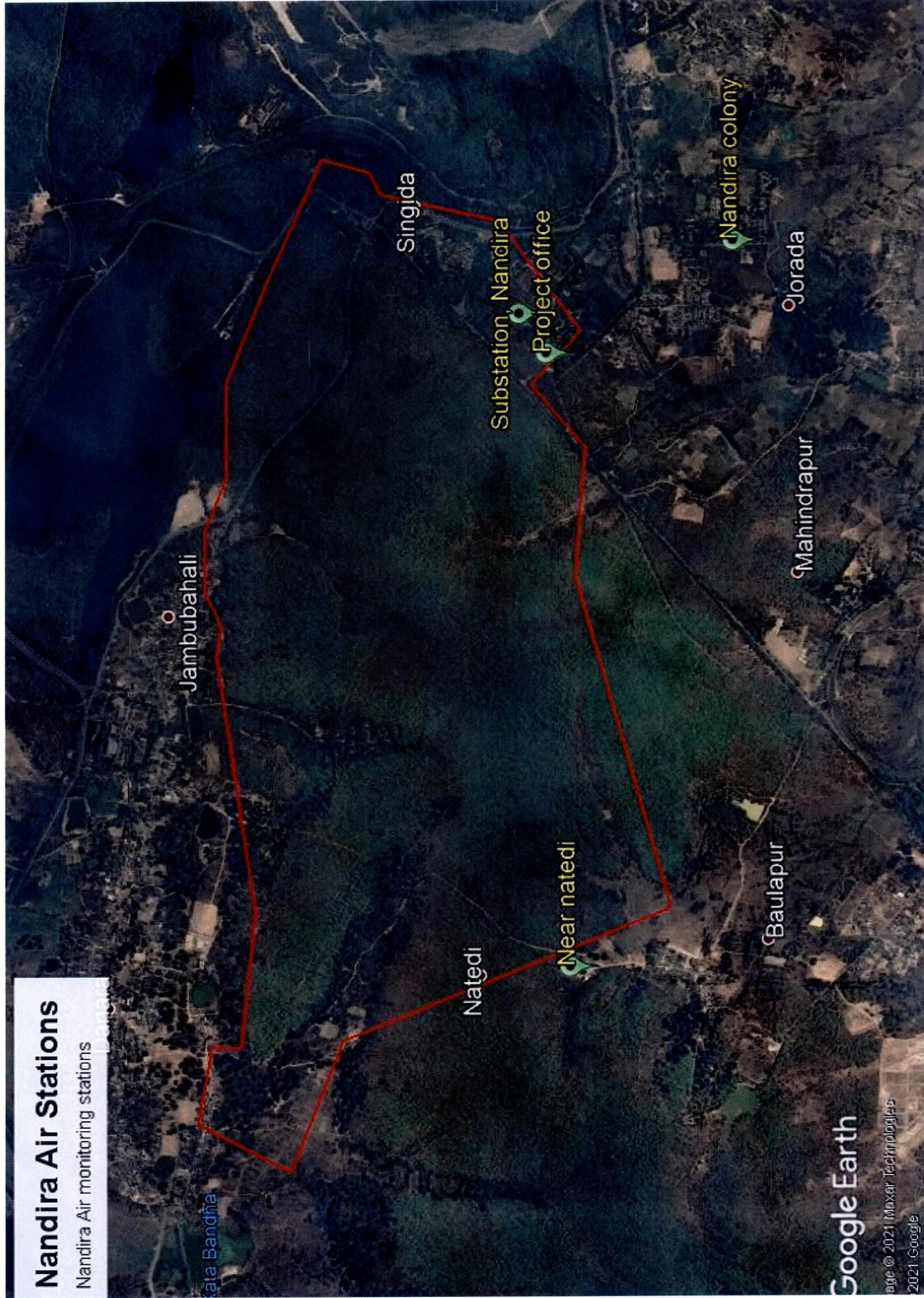
Mahindrapur

Baulapur

Google Earth

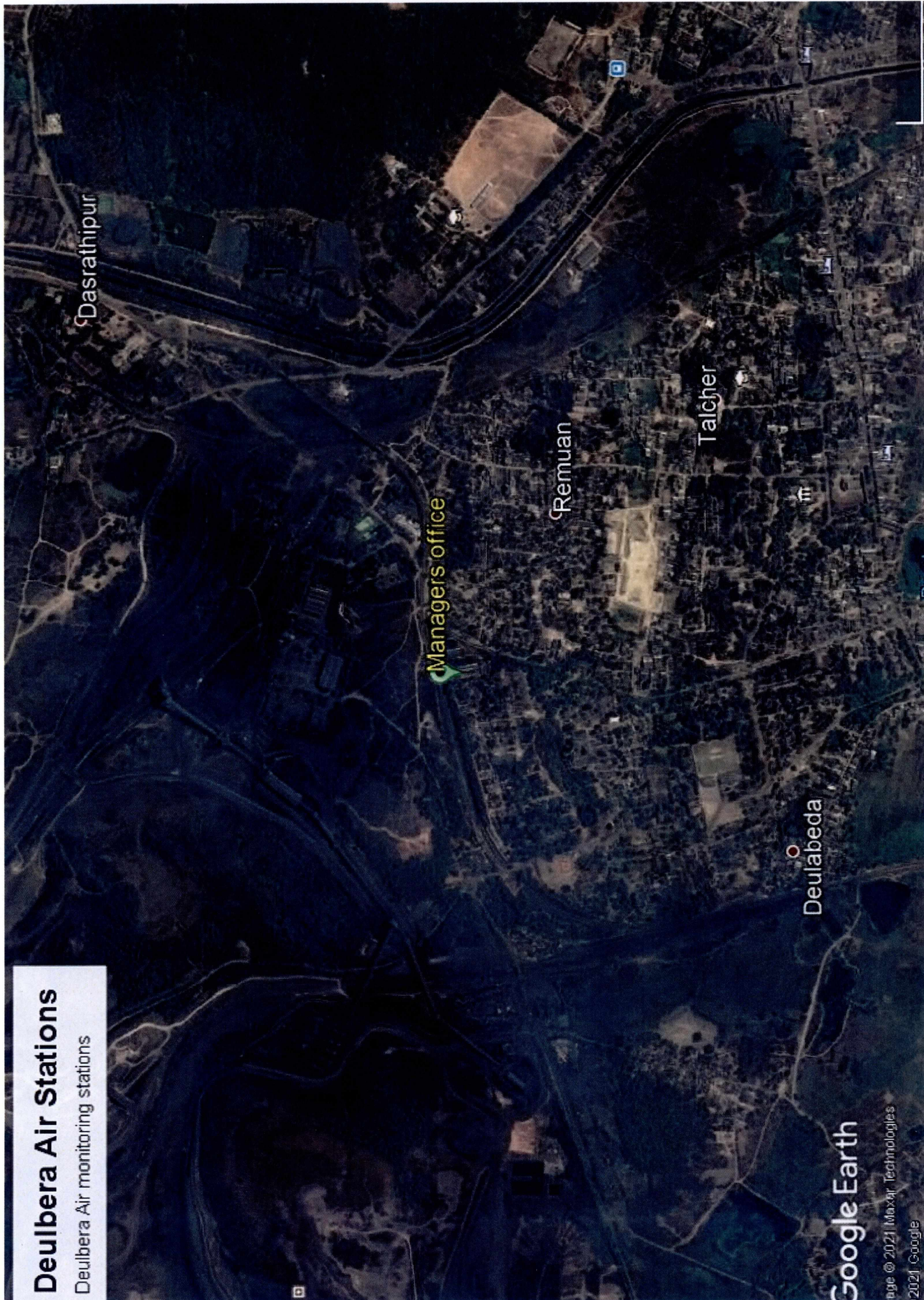
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Deulbera Air Stations

Deulbera Air monitoring stations



Handidhwa Air Stations

Handidhwa Air monitoring stations



Colliery Colony

Handidhwa

Near project office

Mandapal sand mine Air Stations

Mandapal sand mine Air monitoring stations

Near mandapal hospital

Gopinathpur

Sendhagram

Near panchimeshwar

Dhobapal

Santaramunda

Google Earth

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Kakudi & kishoripal sand mine Air Stations

Kakudi & kishoripal sand mine Air monitoring stations

Near kishoripal village