

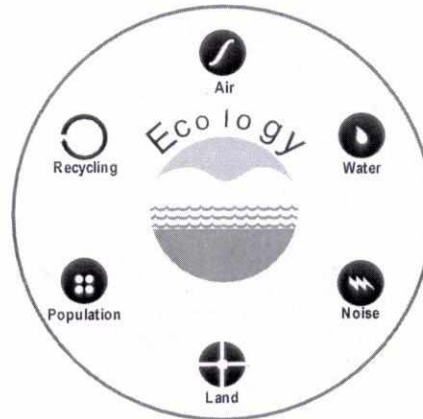
Job No.750001

**Environmental Monitoring Report
Of
Jagannath Area
For
June- 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
02-Jun-21	North-East of Mine	315	206	51	25.99	45.94	Open-Cast Mine	Less than 500m
03-Jun-21	Near NBVL Station (Reported only)	240	147	58	19.61	30.01	CHP, CT Road	About 600m
07-Jun-21	Central Nursery	247	168	55	14.01	32.59	Open-Cast Mine	Less than 500m
17-Jun-21	Near NBVL Station (Reported only)	263	169	55	20.84	40.92	CHP, CT Road	About 600m
24-Jun-21	Central Nursery	209	137	39	25.07	40.43	Open-Cast Mine	Less than 500m
24-Jun-21	North-East of Mine	279	191	55	17.41	31.49	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
03-Jun-21	Near NBVL Station	240	147	58	19.61	30.01	CHP, CT Road	About 600m
03-Jun-21	Near MDTP	288	169	62	17.83	40.99	Railway Siding CHP	About 800m
07-Jun-21	Central Nursery (Reported Only)	247	168	55	14.01	32.59	Open-cast	Less than 500m
17-Jun-21	Near NBVL Station	263	169	55	20.84	40.92	CHP, CT Road	About 600m
17-Jun-21	Near MDTP	314	189	57	15.95	23.34	Railway Siding CHP	About 800m
24-Jun-21	Central Nursery (Reported Only)	209	137	39	25.07	40.43	Open-cast	Less than 500m

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CMPDI, RI-VII, LAB
BHUBANESWAR

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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 :

Jagannath

(Reference Station)

Project :

Jagannath 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-Jun-21	CWS Colony, Meeti	181	74	30	15.95	24.61	Mining Activity	About 1500 m
07-Jun-21	CWS Colony, Meeti	204	95	55	16.07	31.90	Mining Activity	About 1500 m
08-Jun-21	CWS Colony, Meeti	190	86	51	14.60	35.36	Mining Activity	About 1500 m
14-Jun-21	CWS Colony, Meeti	168	85	42	23.52	42.87	Mining Activity	About 1500 m
15-Jun-21	CWS Colony, Meeti	149	83	42	20.33	38.60	Mining Activity	About 1500 m
22-Jun-21	CWS Colony, Meeti	101	67	29	19.97	27.77	Mining Activity	About 1500 m
23-Jun-21	CWS Colony, Meeti	106	69	33	21.77	33.18	Mining Activity	About 1500 m
28-Jun-21	CWS Colony, Meeti	112	62	30	17.35	37.23	Mining Activity	About 1500 m
29-Jun-21	CWS Colony, Meeti	96	57	26	15.65	25.64	Mining Activity	About 1500 m

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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
04-Jun-21	Guthasahi Village	178	71	39	19.40	38.09	Active Mining, Ananta OCP	About 3000m
05-Jun-21	Guthasahi Village	162	76	38	19.38	38.55	Active Mining, Ananta OCP	About 3000m
11-Jun-21	Guthasahi Village	146	64	34	21.41	36.92	Active Mining, Ananta OCP	About 3000m
12-Jun-21	Guthasahi Village	157	74	40	26.88	40.53	Active Mining, Ananta OCP	About 3000m
18-Jun-21	Guthasahi Village	134	79	41	29.54	50.72	Active Mining, Ananta OCP	About 3000m
19-Jun-21	Guthasahi Village	120	73	37	29.58	38.51	Active Mining, Ananta OCP	About 3000m
25-Jun-21	Guthasahi Village	104	65	31	22.13	43.45	Active Mining, Ananta OCP	About 3000m
26-Jun-21	Guthasahi Village	114	69	30	21.28	49.96	Active Mining, Ananta OCP	About 3000m

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

Area: Jagannath

Project	Jagannath OCP			
Monitoring Station	CWS Colony, Meeti			
Date of sampling	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
01-Jun-21/584	3.52	<0.1	<1.0	<1.0
07-Jun-21/585	3.61	<0.1	<1.0	<1.0
08-Jun-21/586	3.74	<0.1	<1.0	<1.0
14-Jun-21/587	3.61	<0.1	<1.0	<1.0
15-Jun-21/730	2.81	<0.1	<1.0	<1.0
22-Jun-21/731	2.74	<0.1	<1.0	<1.0
23-Jun-21/732	2.65	<0.1	<1.0	<1.0
28-Jun-21/733	2.59	<0.1	<1.0	<1.0
29-Jun-21/734	2.70	<0.1	<1.0	<1.0
Standard	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	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
04-Jun-21 ✓	4.01	<0.1	<1.0	<1.0
05-Jun-21 ✓	4.12	<0.1	<1.0	<1.0
11-Jun-21 ✓	4.23	<0.1	<1.0	<1.0
12-Jun-21 ✓	4.36	<0.1	<1.0	<1.0
18-Jun-21 ✓	3.51	<0.1	<1.0	<1.0
19-Jun-21 ✓	3.63	<0.1	<1.0	<1.0
25-Jun-21 ✓	3.74	<0.1	<1.0	<1.0
26-Jun-21 ✓	3.71	<0.1	<1.0	<1.0
Standard	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-Jun-21	Near NBVL Station (Reported only)	65.6	61.0
14-Jun-21	Central Nursery	57.4	54.6
14-Jun-21	Guthasahi Village	55.4	51.8
14-Jun-21	North East of the Mine	59.4	55.7
30-Jun-21	Near NBVL Station (Reported only)	62.1	57.5
30-Jun-21	Central Nursery	56.8	55.3
30-Jun-21	Guthasahi Village	54.7	52.3
30-Jun-21	North East of the Mine	60.5	56.8

PROJECT :

Jagannath OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
14-Jun-21	CWS Colony, MEETI	54.8	52.4
14-Jun-21	Central Nursery (Reported only)	57.4	54.6
14-Jun-21	Near MDTP	58.8	55.4
14-Jun-21	Near NBVL Station	65.6	61.0
30-Jun-21	Central Nursery (Reported only)	56.8	55.3
30-Jun-21	Near MDTP	59.8	55.7
30-Jun-21	Near NBVL Station	62.1	57.5
30-Jun-21	CWS Colony, MEETI	57.6	56.2

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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TABLE--

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
15-Jun-21	STP INLET ✓	6.93		44		<2.0	
15-Jun-21	STP OUTLET ✓	7.33		32		<2.0	
30-Jun-21	O & G Trap Inlet ✓	6.05	<4.0	62	44		
30-Jun-21	O & G Trap Outlet ✓	7.13	<4.0	28	20		
30-Jun-21	STP OUTLET ✓	7.65		34		<2.0	

Project :

Jagannath OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
15-Jun-21	Near MDTP ✓	6.63	<4.0	56	64		
15-Jun-21	STP OUTLET ✓	6.85		34		<2.0	
30-Jun-21	Near MDTP ✓	6.27	<4.0	54	40		
30-Jun-21	STP OUTLET ✓	7.70		30		<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	15-Jun-2021	15-Jun-2021	Acceptable	Permissible
Colour(Hazen)	2	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	1	3	1	5
pH	7.58	7.01	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	44	64	200	600
Total Hardness (Ca CO ₃)(mg/L)	284	168	200	600
Iron(mg/L)	<0.1	<0.1	1.0	No relaxation
Chloride(mg/L)	16	30	250	1000
Total Dissolve Solid(mg/L)	462	318	500	2000
Calcium(mg/L)	84.97	44.89	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)	155.94	92.87	200	400
Nitrate(mg/L)	<0.5	5.77	45	No relaxation
Fluoride(mg/L)	0.51	0.40	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	0.42	5	15
Total Chromium (mg/L)	<0.01	<0.01	0.05	No relaxation
Boron(mg/L)	<0.1	<0.1	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	Ananta OCP		Indian Drinking Standards (IS-10500):2012	
	Ananta Colony Tap Water	Dera Village Tube Well Water		
Monitoring Station				
Date of Sampling	15-Jun-2021	15-Jun-2021	Acceptable	Permissible
Colour(Hazen)	1	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	1	2	1	5
pH	7.42	7.58	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	28	52	200	600
Total Hardness (Ca CO ₃)(mg/L)	56	268	200	600
Iron(mg/L)	<0.1	<0.1	1.0	No relaxation
Chloride(mg/L)	8	14	250	1000
Total Dissolve Solid(mg/L)	104	430	500	2000
Calcium(mg/L)	17.64	73.75	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)	30.21	156.36	200	400
Nitrate(mg/L)	<0.5	<0.5	45	No relaxation
Fluoride(mg/L)	<0.30	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)	<0.04	<0.04	5	15
Total Chromium (mg/L)	<0.01	<0.01	0.05	No relaxation
Boron(mg/L)	<0.1	<0.1	0.5	2.4
Cadmium(mg/L)	<0.001	<0.001	0.003	No relaxation

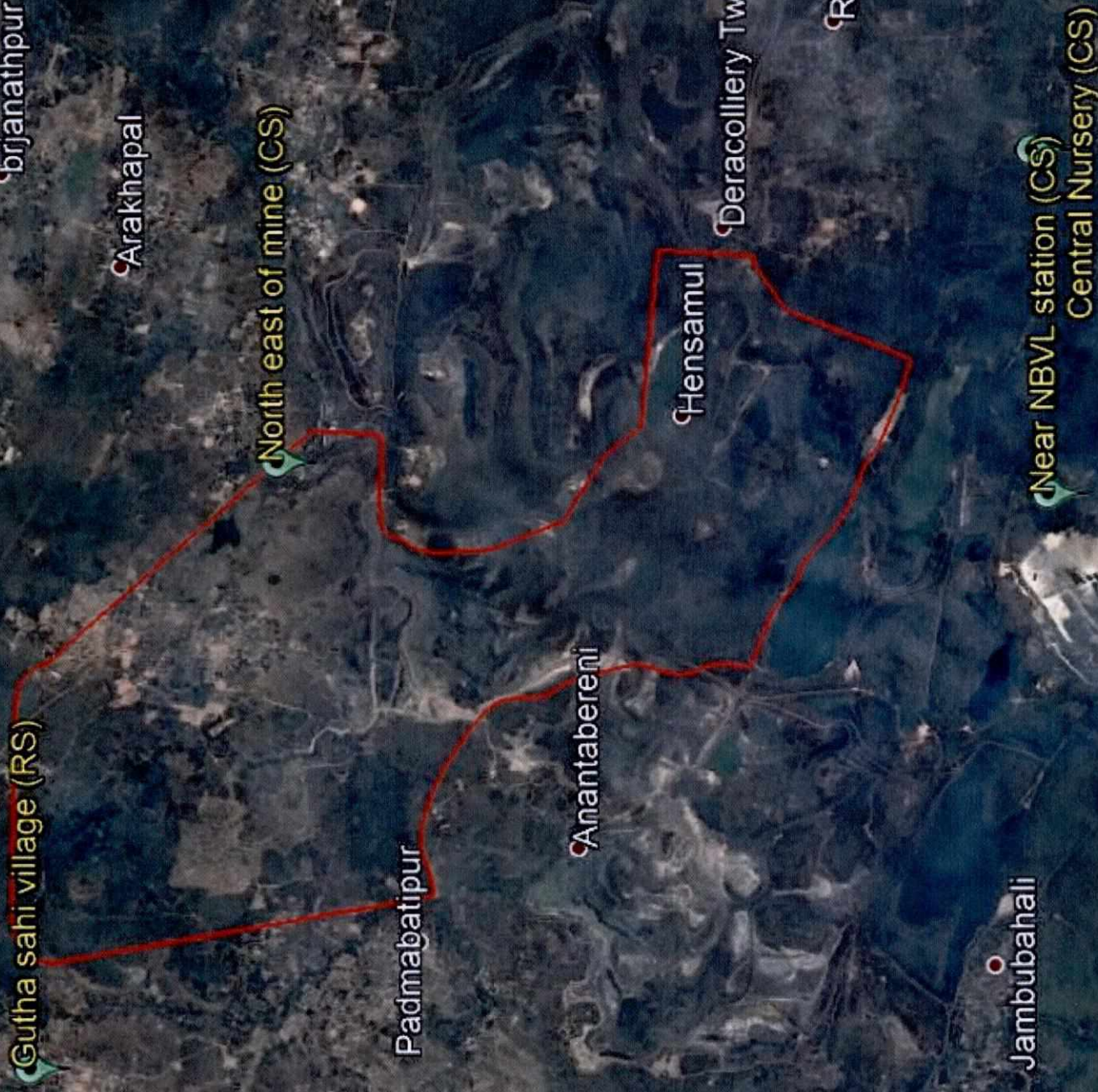
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Ananta Air Stations

Ananta Air monitoring stations

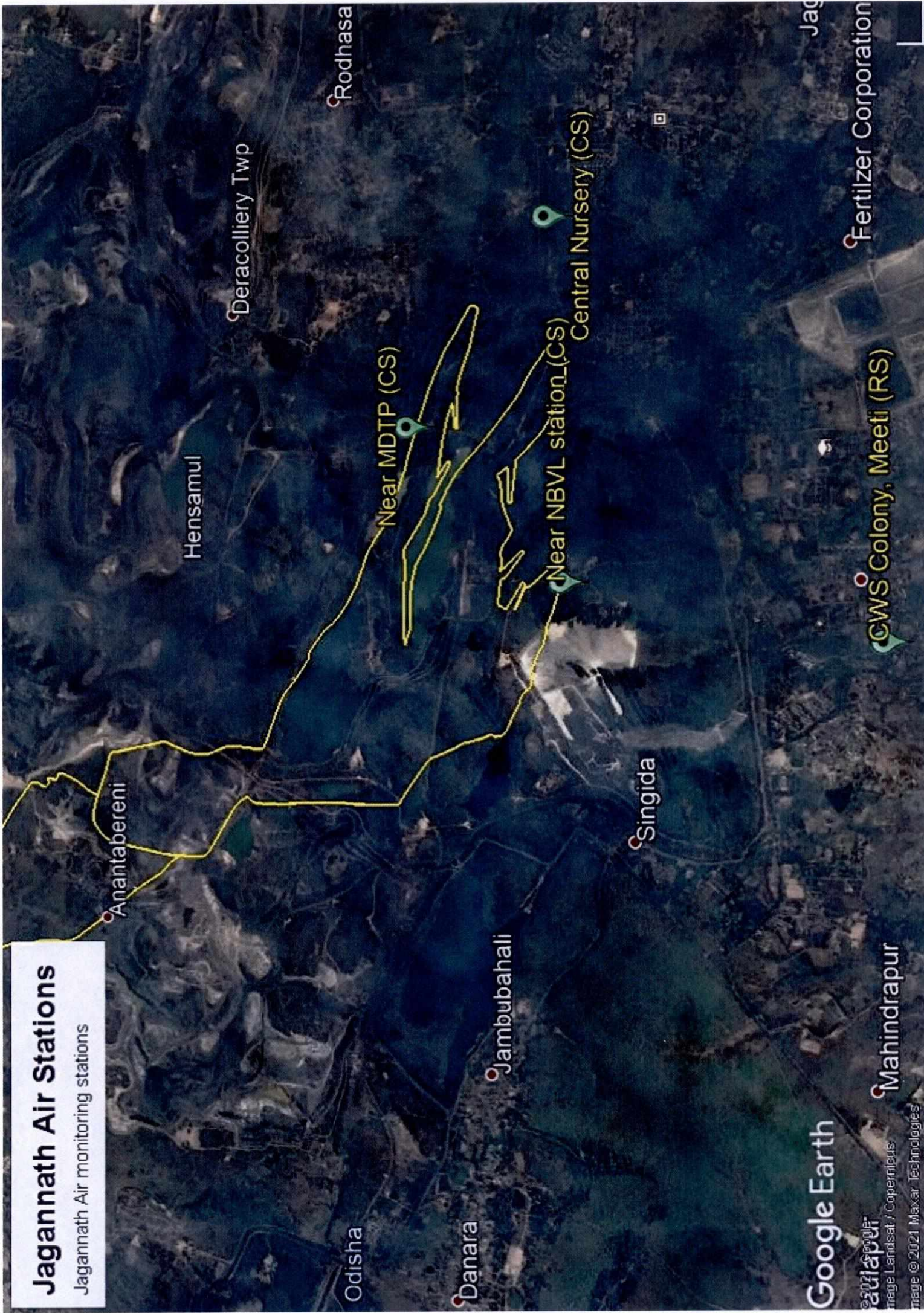


Google Earth

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Jagannath Air Stations

Jagannath Air monitoring stations



Rodhasa

Deracolliery Twp

Hensamul

Anantabereni

Near MDTP (CS)

Near NBVL station, (CS)

Central Nursery (CS)

Odisha

Banara

Jambubahali

Singida

Mahindrapur

CWS Colony, Meeti (RS)

Fertilizer Corporation

Jag

Google Earth

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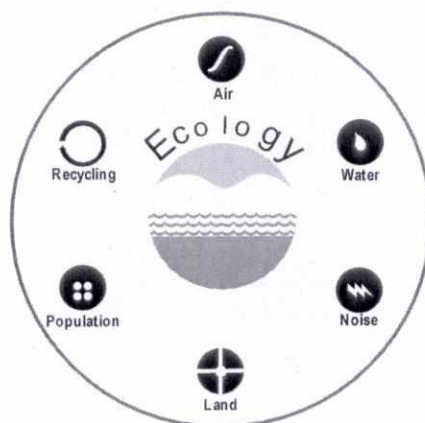
Job No.750001

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

Talcher Coalfield



Mahanadi Coalfields Limited



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

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

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Test Report

AMBIENT AIR QUALITY DATA

Area :

Bharatpur

(Compliance 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
08-Jun-21	Near MGR-RLS of Bharatpur ✓	222	115	44	16.75	24.16	Railway Siding	About 500m
08-Jun-21	Near ETP/Workshop ✓	226	119	51	18.47	33.73	Mining Activities & Coal Stock	Above 500m
08-Jun-21	Near Regional Store ✓	260	147	49	22.25	31.90	Mining Activities	About 500m
08-Jun-21	North-West Point of the Mine ✓	239	124	47	27.14	50.07	Domestic & Mining Activities	About 500m
23-Jun-21	Near MGR-RLS of Bharatpur ✓	213	164	53	19.61	24.76	Railway Siding	About 500m
23-Jun-21	Near ETP/Workshop ✓	212	137	55	14.38	31.80	Mining Activities & Coal Stock	Above 500m
23-Jun-21	Near Regional Store ✓	229	139	45	14.31	27.01	Mining Activities	About 500m
23-Jun-21	North-West Point of the Mine ✓	226	153	51	25.32	53.77	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 :

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
04-Jun-21	Natedi Village (Reported Only)	134	69	34	33.54	46.68	Coal Transportation Road	About 2km
04-Jun-21	Near Joragdia Village	120	64	35	30.95	49.03	Transportation, Domestic Kooking	About 1000m
05-Jun-21	Near Joragdia Village	128	60	33	21.97	42.25	Transportation, Domestic Kooking	About 1000m
05-Jun-21	Natedi Village (Reported Only)	118	55	32	20.51	34.52	Coal Transportation Road	About 2km
11-Jun-21	Natedi Village (Reported Only)	123	68	40	35.00	33.07	Coal Transportation Road	About 2km
11-Jun-21	Near Joragdia Village	155	65	41	23.97	43.45	Transportation, Domestic Kooking	About 1000m
12-Jun-21	Near Joragdia Village	131	74	44	18.69	41.59	Transportation, Domestic Kooking	About 1000m
12-Jun-21	Natedi Village (Reported Only)	131	64	36	24.66	40.49	Coal Transportation Road	About 2km
18-Jun-21	Natedi Village (Reported Only)	165	85	46	23.93	44.39	Coal Transportation Road	About 2km
18-Jun-21	Near Joragdia Village	140	87	40	16.78	45.18	Transportation, Domestic Kooking	About 1000m
19-Jun-21	Near Joragdia Village	116	75	39	19.62	33.02	Transportation, Domestic Kooking	About 1000m
19-Jun-21	Natedi Village (Reported Only)	144	81	50	26.11	38.68	Coal Transportation Road	About 2km
25-Jun-21	Near Joragdia Village	111	68	33	19.13	35.50	Transportation, Domestic Kooking	About 1000m
25-Jun-21	Natedi Village (Reported Only)	159	79	44	28.31	36.49	Coal Transportation Road	About 2km
26-Jun-21	Natedi Village (Reported Only)	129	66	40	16.19	19.68	Coal Transportation Road	About 2km
26-Jun-21	Near Joragdia Village	104	52	29	16.98	33.98	Transportation, Domestic Kooking	About 1000m

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

Area: Bharatpur

Project	Bharatpur OCP			
Monitoring Station	Near Joragadia Village			
Date of sampling	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
04-Jun-21 ✓	4.86	<0.1	<1.0	<1.0
05-Jun-21 ✓	3.74	<0.1	<1.0	<1.0
11-Jun-21 ✓	3.68	<0.1	<1.0	<1.0
12-Jun-21 ✓	3.80	<0.1	<1.0	<1.0
18-Jun-21 ✓	4.12	<0.1	<1.0	<1.0
19-Jun-21 ✓	4.28	<0.1	<1.0	<1.0
25-Jun-21 ✓	4.38	<0.1	<1.0	<1.0
26-Jun-21 ✓	4.27	<0.1	<1.0	<1.0
Standard	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	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
04-Jun-21	2.41	<0.1	<1.0	<1.0
05-Jun-21	2.36	<0.1	<1.0	<1.0
11-Jun-21	2.48	<0.1	<1.0	<1.0
12-Jun-21	2.54	<0.1	<1.0	<1.0
18-Jun-21	2.97	<0.1	<1.0	<1.0
19-Jun-21	3.01	<0.1	<1.0	<1.0
25-Jun-21	2.88	<0.1	<1.0	<1.0
26-Jun-21	2.79	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

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BHUBANESWAR

O. I. C.

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



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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-Jun-21	Near MGR-RLS of Bharatpur	65.6	63.7
14-Jun-21	North West Point of Mine	60.4	58.3
14-Jun-21	Near Regional Store	58.4	53.4
14-Jun-21	Near Wokshop	63.8	59.6
30-Jun-21	Near MGR-RLS of Bharatpur	67.4	65.8
30-Jun-21	North West Point of Mine	61.8	57.8
30-Jun-21	Near Regional Store	59.8	55.4
30-Jun-21	Near Wokshop	58.5	55.0

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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)

Swam

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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
15-Jun-21	STP Inlet	6.95		44		<2.0	
15-Jun-21	STP Outlet (pH, TSS, Faecal Coliform, BOD)	7.70		38		<2.0	
15-Jun-21	Workshop ETP Clear Water Tank	7.20	<4.0	34	28		
29-Jun-21	Workshop ETP Clear Water Tank	7.26	<4.0	56	40		
30-Jun-21	STP Outlet (pH, TSS, Faecal Coliform, BOD)	7.81		30		<2.0	

Hattarwain

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 :

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
29-Jun-21	Mine Sump Water - Main Sump	7.38					
29-Jun-21	Mine Sump Water - Old Quarry Sump	5.65					
29-Jun-21	Mine Sump Water - South Quarry Sump	6.17					

Hattawik

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

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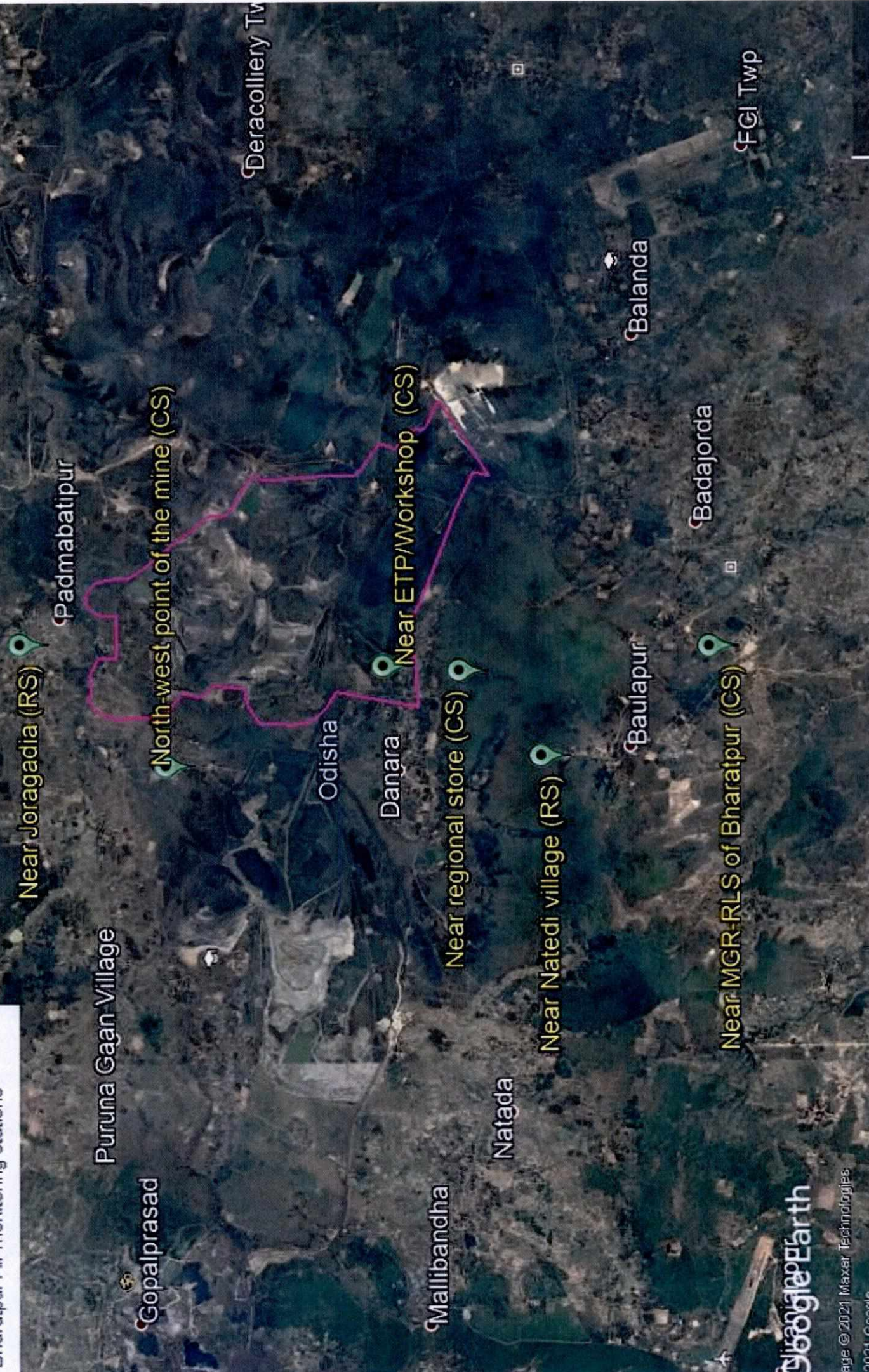
Drinking Water Quality Data Bharatpur Area

Project / OCP	Bharatpur OCP	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	Time Office, BOCP		
Date of Sampling	14-Jun-2021	Acceptable	Permissible
Colour(Hazen)	1	5	15
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	3	1	5
pH	6.58	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	68	200	600
Total Hardness (Ca CO ₃)(mg/L)	552	200	600
Iron(mg/L)	<0.1	1.0	No relaxation
Chloride(mg/L)	20	250	1000
Total Dissolve Solid(mg/L)	728	500	2000
Calcium(mg/L)	128.26	75	200
Copper(mg/L)	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	0.1	0.3
Sulphate(mg/L)	277.62	200	400
Nitrate(mg/L)	<0.5	45	No relaxation
Fluoride(mg/L)	0.68	1	1.5
Arsenic(mg/L)	<0.005	0.01	No relaxation
Lead(mg/L)	<0.005	0.01	No relaxation
Zinc(mg/L)	0.40	5	15
Total Chromium (mg/L)	<0.01	0.05	No relaxation
Boron(mg/L)	<0.1	0.5	2.4
Cadmium(mg/L)	<0.001	0.003	No relaxation

Hattarwal

Bharatpur Air Stations

Bharatpur Air monitoring stations



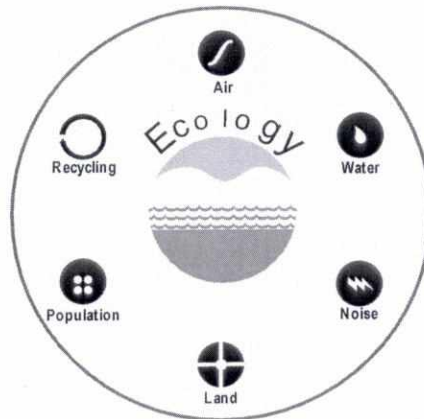
Job No.750001

**Environmental Monitoring Report
Of
Lingaraj Area
For
June- 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 :

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-Jun-21	Near OB Dump No. 10 (Near North Side of Mine)	206	109	35	16.22	35.36	Mining Activities, Coal Corridor	About 500m
07-Jun-21	Near Lingaraj to Dera Road	282	158	52	22.71	27.10	Coal Transportation Road	Less than 500m
07-Jun-21	IWSS	230	123	48	20.65	34.76	Coal Transportation Road, Railway Siding, Coal S.Y	About 500m
07-Jun-21	Near OB Dump No. 5 (South Side of the Mine)	199	133	41	18.44	33.37	Transportation Road, Mining Activities	About 500m
22-Jun-21	Near OB Dump No. 10 (Near North Side of Mine)	219	152	39	14.71	19.25	Mining Activities, Coal Corridor	About 500m
22-Jun-21	Near Lingaraj to Dera Road	223	141	42	16.44	21.74	Coal Transportation Road	Less than 500m
22-Jun-21	IWSS	185	108	40	18.91	21.45	Coal Transportation Road, Railway Siding, Coal S.Y	About 500m
22-Jun-21	Near OB Dump No. 5 (South Side of the Mine)	206	136	46	19.57	33.88	Transportation Road, Mining Activities	About 500m

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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
03-Jun-21	Near Kankili Community Centre	108	52	29	15.72	30.86	Mining Activity	Within 10km
04-Jun-21	Near Kankili Community Centre	135	57	33	17.56	54.89	Mining Activity	Within 10km
10-Jun-21	Near Kankili Community Centre	159	81	43	14.47	30.43	Mining Activity	Within 10km
11-Jun-21	Near Kankili Community Centre	163	76	47	13.88	29.93	Mining Activity	Within 10km
17-Jun-21	Near Kankili Community Centre	127	83	37	25.32	41.81	Mining Activity	Within 10km
18-Jun-21	Near Kankili Community Centre	115	74	34	11.95	23.58	Mining Activity	Within 10km
25-Jun-21	Near Kankili Community Centre	128	84	43	13.60	24.96	Mining Activity	Within 10km
26-Jun-21	Near Kankili Community Centre	107	74	39	15.63	25.65	Mining Activity	Within 10km

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 BHUBANESWAR

[Signature]

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 Bhubaneswar

*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	Ozone (O₃) ($\mu\text{g}/\text{m}^3$)	Lead (Pb) ($\mu\text{g}/\text{m}^3$)	Arsenic (As) (ng/m^3)	Nickel (Ni) (ng/m^3)
03-Jun-21 ✓	2.48	<0.1	<1.0	<1.0
04-Jun-21 ✓	2.56	<0.1	<1.0	<1.0
10-Jun-21 ✓	2.36	<0.1	<1.0	<1.0
11-Jun-21 ✓	3.57	<0.1	<1.0	<1.0
17-Jun-21 ✓	3.54	<0.1	<1.0	<1.0
18-Jun-21 ✓	3.48	<0.1	<1.0	<1.0
25-Jun-21 ✓	3.37	<0.1	<1.0	<1.0
26-Jun-21 ✓	3.28	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

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DA/SW

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CMPDI, RI-VII
Bhubaneswar



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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
11-Jun-21	Near Lingaraj to Dera Road	56.7	51.8
11-Jun-21	IWSS	55.6	53.4
11-Jun-21	Near OB Dump No.5 (South Side of the Mine)	66.4	63.7
11-Jun-21	Near OB Dump No.10 (North Side of the Mine)	59.8	55.6
28-Jun-21	Near Lingaraj to Dera Road	58.4	55.7
28-Jun-21	IWSS	60.5	57.9
28-Jun-21	Near OB Dump No.5 (South Side of the Mine)	65.6	60.5
28-Jun-21	Near OB Dump No.10 (North Side of the Mine)	63.7	59.4

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 BHUBANESWAR

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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Env. Lab
CMPDI, RI-VII
Bhubaneswar**



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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-Jun-21	Clear Water Reservoir of Workshop ETP	7.03	<4.0	40	28		
29-Jun-21	Clear Water Reservoir of Workshop ETP	6.94	<4.0	38	20		

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Bhubaneswar

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CMPDI, RI-VII, LAB
BHUBANESWAR

MoEF Standard Notification dated 25th September, 2000 and MoEF Schedule VI, General standard for discharge of Environmental Pollutants Part A: Effluents	5,5-9,0	10	100	250	30
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Drinking Water Quality Data Lingraj Area

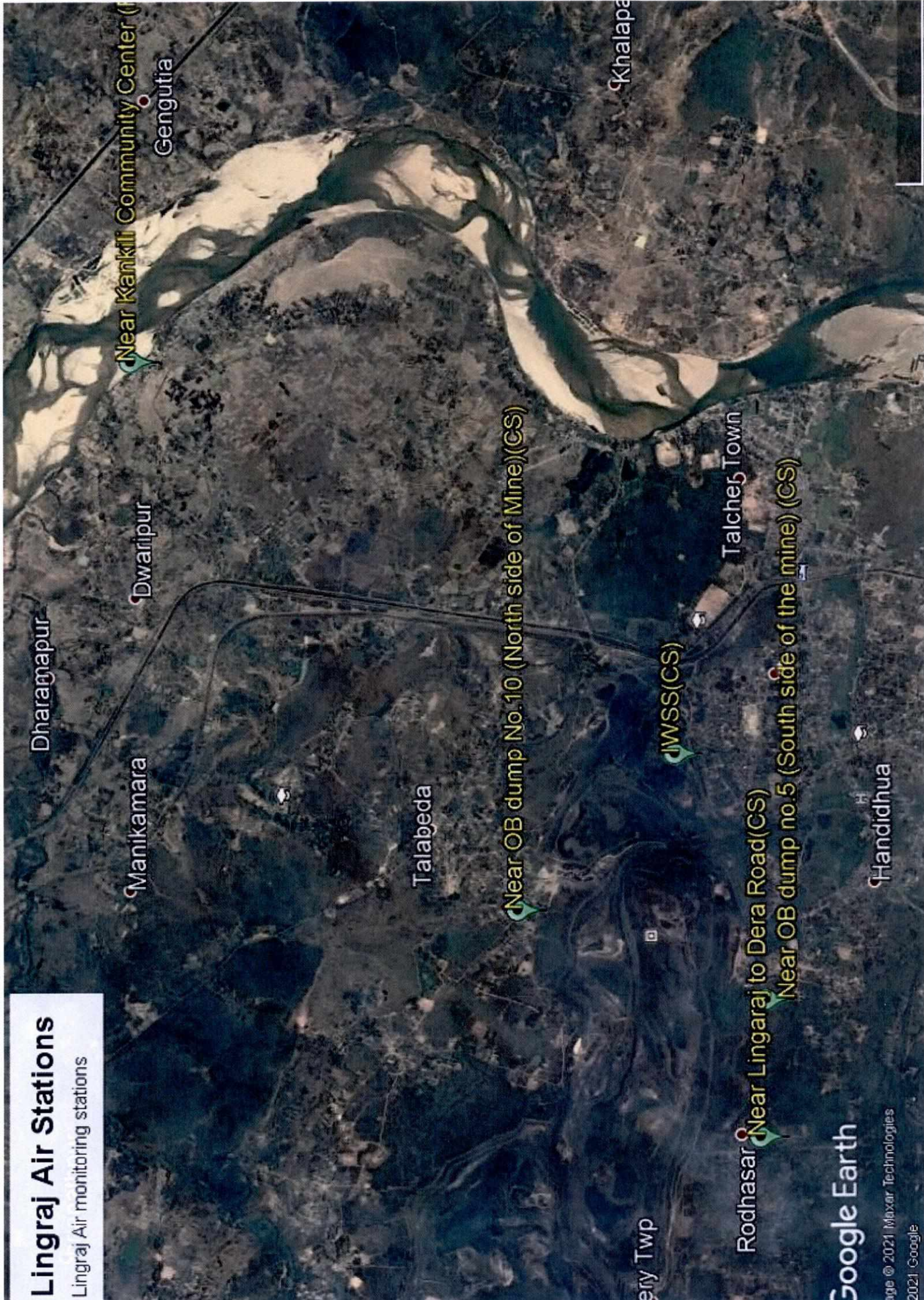
Project / OCP	Lingraj OCP	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	GM Office, Lingraj Area Tap Water		
Date of Sampling	14-Jun-2021	Acceptable	Permissible
Colour(Hazen)	1	5	15
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	1	5
pH	7.44	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	88	200	600
Total Hardness (Ca CO ₃)(mg/L)	132	200	600
Iron(mg/L)	<0.1	1.0	No relaxation
Chloride(mg/L)	22	250	1000
Total Dissolve Solid(mg/L)	264	500	2000
Calcium(mg/L)	32.06	75	200
Copper(mg/L)	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	0.1	0.3
Sulphate(mg/L)	65.31	200	400
Nitrate(mg/L)	1.12	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)	<0.04	5	15
Total Chromium (mg/L)	<0.01	0.05	No relaxation
Boron(mg/L)	<0.1	0.5	2.4
Cadmium(mg/L)	<0.001	0.003	No relaxation

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BHUBANESWAR

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Lingraj Air Stations

Lingraj Air monitoring stations



Google Earth

Image © 2021 Maxar Technologies
2021 Google

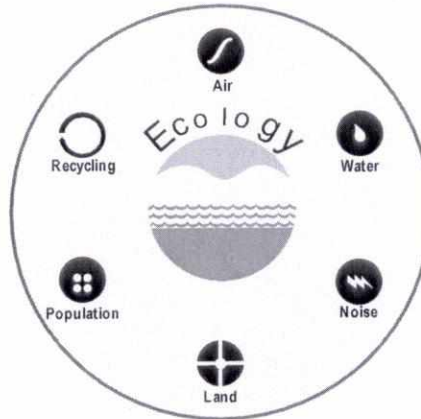
Job No.750001

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

Talcher Coalfield



Mahanadi Coalfields Limited



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

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

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Test Report

AMBIENT AIR QUALITY DATA

Area :

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
02-Jun-21	North East Side of Project Office ✓	238	129	44	23.21	50.22	Mining Activities	About 500m
02-Jun-21	West Of Mine Quarry ✓	208	101	54	24.10	36.18	Mining Activities	About 500m
02-Jun-21	Near Jatra Padia Jarda ✓	190	107	32	36.14	45.33	Mining Activities	About 500m
03-Jun-21	New Time Office-Near Z-patch ✓	195	112	49	15.57	27.02	Mining Activities	About 500m
03-Jun-21	Project Office ✓	176	96	45	16.36	24.09	Mining Activities	About 500m
03-Jun-21	Old Site Office ✓	212	100	42	10.30	27.74	Mining Activities	About 500m
03-Jun-21	Near External OB Dump Jamania ✓	227	144	58	18.10	49.75	Mining Activities	About 500m
16-Jun-21	North East Side of Project Office ✓	234	143	54	24.53	41.29	Mining Activities	About 500m
16-Jun-21	West Of Mine Quarry ✓	297	169	57	29.08	41.41	Mining Activities	About 500m
16-Jun-21	Near Jatra Padia Jarda ✓	266	154	43	16.54	26.36	Mining Activities	About 500m
17-Jun-21	New Time Office-Near Z-patch ✓	241	163	50	20.02	29.29	Mining Activities	About 500m
17-Jun-21	Project Office ✓	221	133	47	12.52	30.30	Mining Activities	About 500m
17-Jun-21	Old Site Office ✓	217	133	46	21.38	17.30	Mining Activities	About 500m
17-Jun-21	Near External OB Dump Jamania ✓	266	180	54	20.76	24.84	Mining Activities	About 500m

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 CMPDI, RI-VII, LAB
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S. I. S. M.

O. I. C.
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 CMPDI, RI-VII
 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 $\mu\text{g}/\text{cu.m.}$)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
01-Jun-21	South Of Proposed Quarry Limit of KOCP	158	77	39	21.30	46.60	Mining Activities	About 500m
09-Jun-21	South Of Proposed Quarry Limit of KOCP	158	82	47	15.63	27.77	Mining Activities	About 500m
10-Jun-21	South Of Proposed Quarry Limit of KOCP	173	79	43	22.40	29.22	Mining Activities	About 500m
14-Jun-21	South Of Proposed Quarry Limit of KOCP	168	94	50	15.69	33.96	Mining Activities	About 500m
15-Jun-21	South Of Proposed Quarry Limit of KOCP	131	79	45	27.06	48.58	Mining Activities	About 500m
23-Jun-21	South Of Proposed Quarry Limit of KOCP	148	83	50	26.88	45.24	Mining Activities	About 500m
24-Jun-21	South Of Proposed Quarry Limit of KOCP	132	66	47	22.30	39.56	Mining Activities	About 500m
28-Jun-21	South Of Proposed Quarry Limit of KOCP	122	73	40	30.14	49.71	Mining Activities	About 500m
29-Jun-21	South Of Proposed Quarry Limit of KOCP	127	70	38	33.96	43.97	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	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
01-Jun-21	2.86	<0.1	<1.0	<1.0
09-Jun-21	2.79	<0.1	<1.0	<1.0
10-Jun-21	2.71	<0.1	<1.0	<1.0
14-Jun-21	2.60	<0.1	<1.0	<1.0
15-Jun-21	2.89	<0.1	<1.0	<1.0
23-Jun-21	2.81	<0.1	<1.0	<1.0
24-Jun-21	2.79	<0.1	<1.0	<1.0
28-Jun-21	2.71	<0.1	<1.0	<1.0
29-Jun-21	7.64	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

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A Mini Ratna Company

TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Kaniha

PROJECT :

Kaniha OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
12-Jun-21	Telisingha Village	63.7	60.0
12-Jun-21	Near Jarda Village	65.7	63.4
12-Jun-21	Site Office	57.6	53.4
12-Jun-21	Patharmunda Village	60.6	58.4
29-Jun-21	Telisingha Village	65.8	60.9
29-Jun-21	Near Jarda Village	66.7	64.1
29-Jun-21	Site Office	55.4	53.9
29-Jun-21	Patharmunda Village	62.7	59.3

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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A Mitsui Kubota Company

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
03-Jun-21	Clear Water Pond ✓	7.44	<4.0	40	32		
03-Jun-21	Kansamunda Sump ✓	7.68	<4.0	46	36		
03-Jun-21	Pre Sedimentation Pond ✓	7.14	<4.0	42	36		
03-Jun-21	Z-Patch Sump ✓	7.30	<4.0	34	28		
09-Jun-21	Clear Water Pond ✓	7.51	<4.0	46	36		
09-Jun-21	Kansamunda Sump ✓	7.75	<4.0	44	40		
09-Jun-21	Pre Sedimentation Pond ✓	7.10	<4.0	48	40		
09-Jun-21	Z-Patch Sump ✓	7.25	<4.0	40	36		
17-Jun-21	Clear Water Pond ✓	7.24	<4.0	26	12		
17-Jun-21	Kansamunda Sump ✓	7.01	<4.0	40	24		
17-Jun-21	Pre Sedimentation Pond ✓	7.32	<4.0	32	16		
17-Jun-21	Z-Patch Sump ✓	7.19	<4.0	30	16		
30-Jun-21	Clear Water Pond ✓	7.21	<4.0	34	16		
30-Jun-21	Kansamunda Sump ✓	6.94	<4.0	44	28		
30-Jun-21	Pre Sedimentation Pond ✓	7.40	<4.0	36	20		
30-Jun-21	Z-Patch Sump ✓	7.15	<4.0	34	20		

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MoEF Standard Notification dated 25th September, 2000 and MoEF Schedule VI, General standard for discharge of Environmental Pollutants Part A: Effluents	5.5-9.0	10	100	250	30
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Drinking Water Quality Data 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	9-Jun-2021	9-Jun-2021	Acceptable	Permissible
Colour(Hazen)	2	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	3	1	1	5
pH	7.40	7.64	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	40	48	200	600
Total Hardness (Ca CO₃)(mg/L)	160	168	200	600
Iron(mg/L)	<0.1	<0.1	1.0	No relaxation
Chloride(mg/L)	12	12	250	1000
Total Dissolve Solid(mg/L)	280	290	500	2000
Calcium(mg/L)	40.08	56.11	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)	117.48	120.56	200	400
Nitrate(mg/L)	<0.5	<0.5	45	No relaxation
Fluoride(mg/L)	<0.3	<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)	0.26	<0.04	5	15
Total Chromium (mg/L)	<0.01	<0.01	0.05	No relaxation
Boron(mg/L)	<0.1	<0.1	0.5	2.4
Cadmium(mg/L)	<0.001	<0.001	0.003	No relaxation

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Kaniha Air Stations

Kaniha Air monitoring stations



Job No.750001

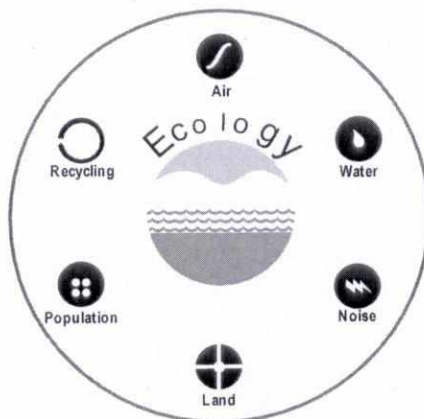
**Environmental Monitoring Report
Of
Hingula Area
For
June- 2021**

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 :

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
02-Jun-21	South West of the Mine	239	119	48	14.04	33.35	Mining Operations And Coal Corridor	About 350m
02-Jun-21	Pump House Near Outsourcing Working Pach & Coal TR	163	97	46	18.24	29.96	Mining Operation And Coal Transportation Road	About 200m
16-Jun-21	South West of the Mine	271	166	53	18.28	35.15	Mining Operations And Coal Corridor	About 350m
16-Jun-21	Pump House Near Outsourcing Working Pach & Coal TR	269	143	51	19.78	35.61	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-Jun-21	Time Office	337	224	62	24.99	35.59	Mining Operations and Haul Road	About 200m
01-Jun-21	South-West Side of Mine	247	151	55	27.40	49.09	Mining Operations	About 300m
15-Jun-21	Time Office	353	217	58	17.61	38.70	Mining Operations and Haul Road	About 200m
15-Jun-21	South-West Side of Mine	269	169	51	24.64	50.90	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 :

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
04-Jun-21	East of the Mine,Natedi Village ✓	134	69	34	33.54	46.68	Coal Transportation Road	About 2km
04-Jun-21	North West of the Mine, Solda Village (Reported Only)	107	53	28	20.03	54.37	Coal Transportation Road	About 2km
05-Jun-21	North West of the Mine, Solda Village (Reported Only)	124	58	31	20.93	44.04	Coal Transportation Road	About 2km
05-Jun-21	East of the Mine,Natedi Village ✓	118	55	32	20.51	34.52	Coal Transportation Road	About 2km
11-Jun-21	East of the Mine,Natedi Village ✓	123	68	40	35.00	33.07	Coal Transportation Road	About 2km
11-Jun-21	North West of the Mine, Solda Village (Reported Only)	145	66	38	18.94	47.26	Coal Transportation Road	About 2km
12-Jun-21	North West of the Mine, Solda Village (Reported Only)	160	81	43	24.92	55.11	Coal Transportation Road	About 2km
12-Jun-21	East of the Mine,Natedi Village ✓	131	64	36	24.66	40.49	Coal Transportation Road	About 2km
18-Jun-21	North West of the Mine, Solda Village (Reported Only)	153	87	43	24.03	35.16	Coal Transportation Road	About 2km
18-Jun-21	East of the Mine,Natedi Village ✓	165	85	46	23.93	44.39	Coal Transportation Road	About 2km
19-Jun-21	East of the Mine,Natedi Village ✓	144	81	50	26.11	38.68	Coal Transportation Road	About 2km
19-Jun-21	North West of the Mine, Solda Village (Reported Only)	140	89	49	26.32	39.59	Coal Transportation Road	About 2km
25-Jun-21	East of the Mine,Natedi Village ✓	159	79	44	28.31	36.49	Coal Transportation Road	About 2km
25-Jun-21	North West of the Mine, Solda Village (Reported Only)	129	66	37	25.46	31.31	Coal Transportation Road	About 2km
26-Jun-21	North West of the Mine, Solda Village (Reported Only)	125	67	41	23.12	32.66	Coal Transportation Road	About 2km
26-Jun-21	East of the Mine,Natedi Village ✓	129	66	40	16.19	19.68	Coal Transportation Road	About 2km

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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
03-Jun-21	North of the Mine,Purnapi,Kumunda Village	169	78	50	19.26	34.44	Mining Operations	About 3km
04-Jun-21	North of the Mine,Purnapi,Kumunda Village	176	81	47	15.22	30.74	Mining Operations	About 3km
04-Jun-21	North East of the Mine, Solda Village	107	53	28	20.03	54.37	Coal Transportation Road	About 2km
05-Jun-21	North East of the Mine, Solda Village	124	58	31	20.93	44.04	Coal Transportation Road	About 2km
10-Jun-21	North of the Mine,Purnapi,Kumunda Village	117	71	40	14.68	41.17	Mining Operations	About 3km
11-Jun-21	North East of the Mine, Solda Village	145	66	38	18.94	47.26	Coal Transportation Road	About 2km
11-Jun-21	North of the Mine,Purnapi,Kumunda Village	137	76	44	26.58	46.60	Mining Operations	About 3km
12-Jun-21	North East of the Mine, Solda Village	160	81	43	24.92	55.11	Coal Transportation Road	About 2km
17-Jun-21	North of the Mine,Purnapi,Kumunda Village	134	81	43	19.58	26.36	Mining Operations	About 3km
18-Jun-21	North of the Mine,Purnapi,Kumunda Village	145	89	39	19.11	36.28	Mining Operations	About 3km
18-Jun-21	North East of the Mine, Solda Village	153	87	43	24.03	35.16	Coal Transportation Road	About 2km
19-Jun-21	North East of the Mine, Solda Village	140	89	49	26.32	39.59	Coal Transportation Road	About 2km
25-Jun-21	North of the Mine,Purnapi,Kumunda Village	110	61	30	21.29	37.29	Mining Operations	About 3km
25-Jun-21	North East of the Mine, Solda Village	129	66	37	25.46	31.31	Coal Transportation Road	About 2km
26-Jun-21	North East of the Mine, Solda Village	125	67	41	23.12	32.66	Coal Transportation Road	About 2km
26-Jun-21	North of the Mine,Purnapi,Kumunda Village	116	68	37	15.66	30.41	Mining Operations	About 3km

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*NAAQS,2009

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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	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
03-Jun-21 ✓	4.01	<0.1	<1.0	<1.0
04-Jun-21 ✓	3.99	<0.1	<1.0	<1.0
10-Jun-21 ✓	4.06	<0.1	<1.0	<1.0
12-Jun-21 ✓	3.96	<0.1	<1.0	<1.0
17-Jun-21 ✓	2.12	<0.1	<1.0	<1.0
18-Jun-21 ✓	2.28	<0.1	<1.0	<1.0
25-Jun-21 ✓	2.30	<0.1	<1.0	<1.0
26-Jun-21 ✓	2.39	<0.1	<1.0	<1.0
28-Jun-21 ✓	2.47	<0.1	<1.0	<1.0
Standard	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	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
04-Jun-21	4.27	<0.1	<1.0	<1.0
05-Jun-21	4.12	<0.1	<1.0	<1.0
11-Jun-21	3.90	<0.1	<1.0	<1.0
12-Jun-21	3.97	<0.1	<1.0	<1.0
18-Jun-21	3.46	<0.1	<1.0	<1.0
19-Jun-21	3.52	<0.1	<1.0	<1.0
25-Jun-21	3.48	<0.1	<1.0	<1.0
26-Jun-21	3.57	<0.1	<1.0	<1.0
Standard	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	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
04-Jun-21	4.27	<0.1	<1.0	<1.0
05-Jun-21	4.12	<0.1	<1.0	<1.0
11-Jun-21	3.90	<0.1	<1.0	<1.0
12-Jun-21	3.97	<0.1	<1.0	<1.0
18-Jun-21	3.46	<0.1	<1.0	<1.0
19-Jun-21	3.52	<0.1	<1.0	<1.0
25-Jun-21	3.48	<0.1	<1.0	<1.0
26-Jun-21	3.57	<0.1	<1.0	<1.0
Standard	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	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
04-Jun-21	2.41	<0.1	<1.0	<1.0
05-Jun-21	2.36	<0.1	<1.0	<1.0
11-Jun-21	2.48	<0.1	<1.0	<1.0
12-Jun-21	2.54	<0.1	<1.0	<1.0
18-Jun-21	2.97	<0.1	<1.0	<1.0
19-Jun-21	3.01	<0.1	<1.0	<1.0
25-Jun-21	2.88	<0.1	<1.0	<1.0
26-Jun-21	2.79	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

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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
12-Jun-21	South West Side of the Mine	63.7	60.9
12-Jun-21	North East of the Mine, Solda Village	68.9	65.6
12-Jun-21	North of the Mine, Purnapi Kumunda Village	65.6	63.4
12-Jun-21	Time Office	67.6	65.0
29-Jun-21	South West Side of the Mine	66.3	65.1
29-Jun-21	North East of the Mine, Solda Village	59.7	55.8
29-Jun-21	North of the Mine, Purnapi Kumunda Village	64.8	60.7
29-Jun-21	Time Office	65.8	60.1

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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
12-Jun-21	Backfilled Area Near Dozer Shed	67.7	66.9
12-Jun-21	Pump House Near Outsourcing Working Patch&Coal TR	68.4	65.8
12-Jun-21	Near Project Office Balram OCP	69.8	65.6
12-Jun-21	South West of the Mine	65.4	63.8
28-Jun-21	Backfilled Area Near Dozer Shed	65.4	63.7
28-Jun-21	Pump House Near Outsourcing Working Patch&Coal TR	66.8	63.9
28-Jun-21	Near Project Office Balram OCP	67.8	65.6
28-Jun-21	South West of the Mine	69.7	65.7

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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
15-Jun-21	STP Outlet of Balram Colony ✓	7.67		34		<2.0	
30-Jun-21	Inlet of O & G Trap ✓	7.42	<4.0	56	44		
30-Jun-21	Outlet of O & G Trap ✓	7.36	<4.0	30	20		
30-Jun-21	STP Outlet of Balram Colony ✓	7.08		34		<2.0	

Project :

Hingula OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
30-Jun-21	Inlet of O & G trap ✓	7.30	<4.0	66	60		
30-Jun-21	Outlet of O & G trap ✓	7.38	<4.0	36	28		

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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 Hingula Area

Project / OCP	Balaram OCP			Indian Drinking Standards (IS-10500):2012	
	Monitoring Station	Danara Village Borewell Water	Balaram Colony Tap Water		
Date of Sampling	12-Jun-2021	12-Jun-2021	12-Jun-2021	Acceptable	Permissible
Colour(Hazen)	1	2	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	3	1	2	1	5
pH	7.53	7.50	7.98	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	184	44	240	200	600
Total Hardness (Ca CO ₃)(mg/L)	208	268	220	200	600
Iron(mg/L)	<0.1	<0.1	<0.1	1.0	No relaxation
Chloride(mg/L)	30	20	32	250	1000
Total Dissolve Solid(mg/L)	428	420	520	500	2000
Calcium(mg/L)	59.32	75.35	49.70	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)	76.78	172.17	43.08	200	400
Nitrate(mg/L)	0.70	<0.50	2.14	45	No relaxation
Fluoride(mg/L)	<0.30	<0.30	0.48	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)	0.07	0.04	<0.04	5	15
Total Chromium (mg/L)	<0.01	<0.01	<0.01	0.05	No relaxation
Boron(mg/L)	<0.1	<0.1	<0.1	0.5	2.4
Cadmium(mg/L)	<0.001	<0.001	<0.001	0.003	No relaxation

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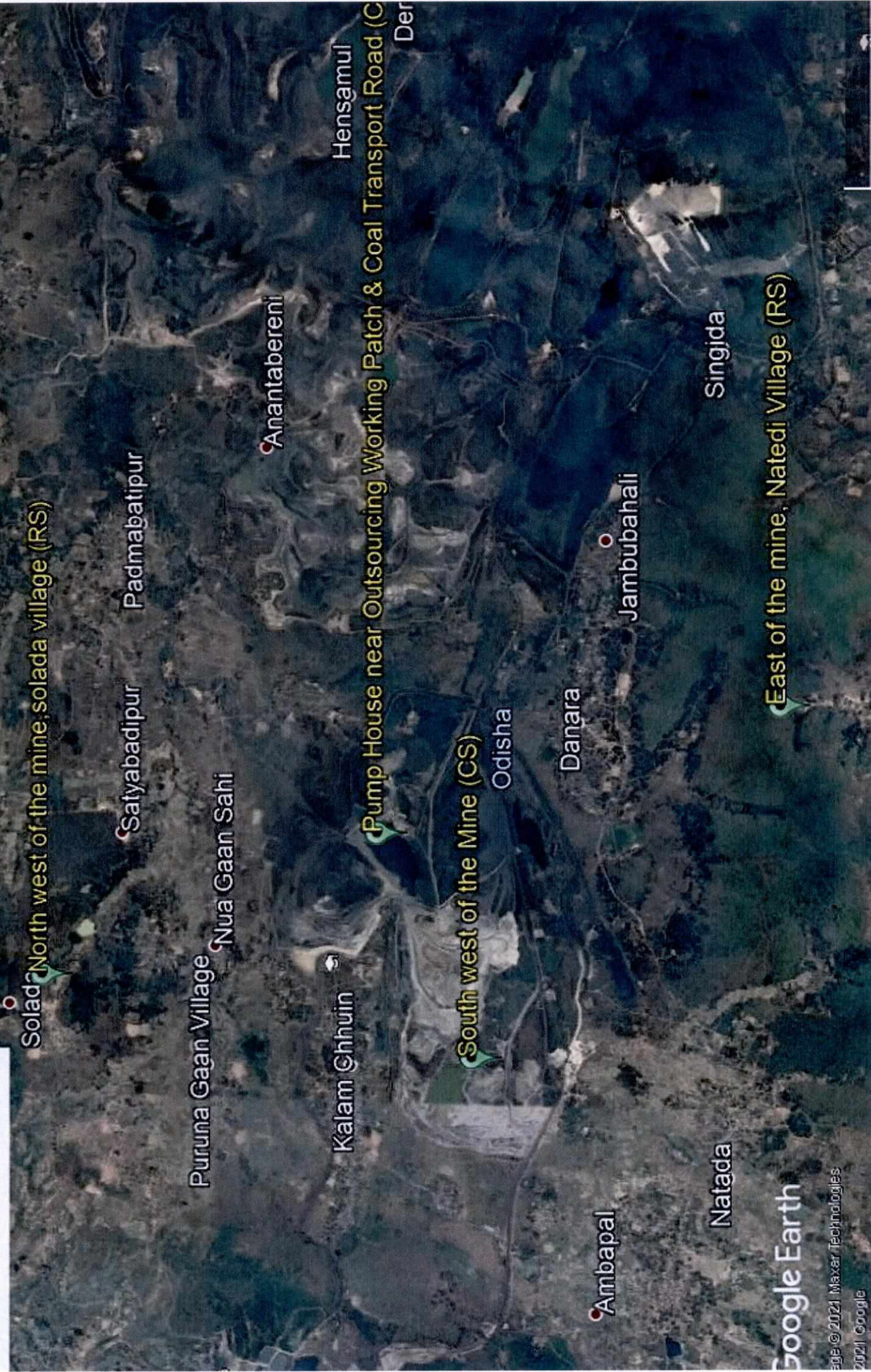
Drinking Water Quality Data Hingula Area

Project / OCP	Hingula OCP			Indian Drinking Standards (IS-10500):2012	
	Time Office Water	Gopalprasad Village Bore Well Water	Kumunda Village Bore Well Water	Acceptable	Permissible
Date of Sampling	12-Jun-2021	12-Jun-2021	12-Jun-2021	Acceptable	Permissible
Colour(Hazen)	1	2	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	3	1	1	1	5
pH	7.08	7.29	7.20	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	196	260	264	200	600
Total Hardness (Ca CO ₃)(mg/L)	176	220	208	200	600
Iron(mg/L)	<0.1	<0.1	<0.1	1.0	No relaxation
Chloride(mg/L)	50	42	42	250	1000
Total Dissolve Solid(mg/L)	394	440	432	500	2000
Calcium(mg/L)	32.06	41.68	44.89	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)	6.57	2.24	3.36	200	400
Nitrate(mg/L)	<0.5	<0.5	<0.5	45	No relaxation
Fluoride(mg/L)	0.42	0.49	0.46	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)	0.19	0.20	0.16	5	15
Total Chromium (mg/L)	<0.01	<0.01	<0.01	0.05	No relaxation
Boron(mg/L)	<0.1	<0.1	<0.1	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



Job No.750001

**Environmental Monitoring Report
Of
Talcher Area
For
June- 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 :

Talcher

(Compliance Station)

Project :

Talcher Colliery

(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-Jun-21	Near Canteen Talcher Colliery ✓	230	118	49	19.03	22.98	Local Transportation	About 500m
08-Jun-21	Officer Club, Talcher Area ✓	210	112	36	23.47	21.95	Mining Activities, Ananta, Lingaraj & Bharatpur OCP	About 1000m
24-Jun-21	Near Canteen Talcher Colliery ✓	224	129	45	24.72	39.52	Local Transportation	About 500m
24-Jun-21	Officer Club, Talcher Area ✓	104	61	33	17.61	30.30	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-Jun-21	Project Office ✓	222	96	33	20.54	26.27	Local Transportation, CHP	About 500m
01-Jun-21	Sub Station ✓	179	101	46	16.48	37.23	Transportation & Railway Sidings of BOCP	About 500m
15-Jun-21	Sub Station ✓	229	134	53	35.43	43.46	Transportation & Railway Sidings of BOCP	About 500m
16-Jun-21	Project Office ✓	197	121	44	25.27	21.99	Local Transportation, CHP	About 500m

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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-Jun-21	IWSS, Talcher (Reported Only)	230	123	48	20.65	34.76	Coal Transportation Road, Railway Siding, Coal S.Y	About 500m
22-Jun-21	IWSS, Talcher (Reported Only)	185	108	40	18.91	21.45	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
09-Jun-21	Manager's Office	217	123	37	23.50	35.15	Local Transportation, CHP	About 500m
28-Jun-21	Manager's Office	169	110	49	14.23	27.10	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 µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
09-Jun-21	Near Mandapal Chowk	228	127	56	25.20	30.16	Mining Activity	Less than 500m
09-Jun-21	Near Pachismeshwar Temple	171	94	41	24.73	32.95	Mining Activity	Less than 500m
26-Jun-21	Near Pachismeshwar Temple	208	110	31	27.90	33.81	Mining Activity	Less than 500m
28-Jun-21	Near Mandapal Chowk	224	125	54	15.73	23.95	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 $\mu\text{g}/\text{cu.m.}$)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
09-Jun-21	Near Kishoripal Village	213	104	48	21.33	25.64	Domestic Cooking, Transportation Road	About 500m
28-Jun-21	Near Kishoripal Village	238	115	45	19.01	23.65	Domestic Cooking, Transportation Road	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

(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
03-Jun-21	Nandira Colony ✓	133	51	34	19.39	29.17	Local Transportation, Mining Activities etc.	About 500m
04-Jun-21	Nandira Colony ✓	152	57	36	14.96	20.39	Local Transportation, Mining Activities etc.	About 500m
04-Jun-21	Near Natedi Village (Reported Only) ✓	134	69	34	33.54	46.68	Coal Transportation Road	About 2km
05-Jun-21	Near Natedi Village (Reported Only) ✓	118	55	32	20.51	34.52	Coal Transportation Road	About 2km
10-Jun-21	Nandira Colony ✓	111	69	40	20.88	31.62	Local Transportation, Mining Activities etc.	About 500m
11-Jun-21	Near Natedi Village (Reported Only) ✓	123	68	40	35.00	33.07	Coal Transportation Road	About 2km
11-Jun-21	Nandira Colony ✓	108	60	33	22.69	24.23	Local Transportation, Mining Activities etc.	About 500m
12-Jun-21	Near Natedi Village (Reported Only) ✓	131	64	36	24.66	40.49	Coal Transportation Road	About 2km
17-Jun-21	Nandira Colony ✓	147	88	47	24.45	42.80	Local Transportation, Mining Activities etc.	About 500m
18-Jun-21	Nandira Colony ✓	155	81	43	16.00	23.79	Local Transportation, Mining Activities etc.	About 500m
18-Jun-21	Near Natedi Village (Reported Only) ✓	165	85	46	23.93	44.39	Coal Transportation Road	About 2km
19-Jun-21	Near Natedi Village (Reported Only) ✓	144	81	50	26.11	38.68	Coal Transportation Road	About 2km
24-Jun-21	Nandira Colony ✓	135	77	35	13.53	29.97	Local Transportation, Mining Activities etc.	About 500m
25-Jun-21	Nandira Colony ✓	114	69	39	16.04	32.02	Local Transportation, Mining Activities etc.	About 500m
25-Jun-21	Near Natedi Village (Reported Only) ✓	159	79	44	28.31	36.49	Coal Transportation Road	About 2km
26-Jun-21	Near Natedi Village (Reported Only) ✓	129	66	40	16.19	19.68	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: Talcher

Project	Nandira			
Monitoring Station	East of the Mine, Natedi Village			
Date of sampling	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
04-Jun-21	2.41	<0.1	<1.0	<1.0
05-Jun-21	2.36	<0.1	<1.0	<1.0
11-Jun-21	2.48	<0.1	<1.0	<1.0
12-Jun-21	2.54	<0.1	<1.0	<1.0
18-Jun-21	2.97	<0.1	<1.0	<1.0
19-Jun-21	3.01	<0.1	<1.0	<1.0
25-Jun-21	2.88	<0.1	<1.0	<1.0
26-Jun-21	2.79	<0.1	<1.0	<1.0
Standard	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	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
03-Jun-21	3.76	<0.1	<1.0	<1.0
04-Jun-21	3.61	<0.1	<1.0	<1.0
10-Jun-21	3.80	<0.1	<1.0	<1.0
11-Jun-21	3.69	<0.1	<1.0	<1.0
17-Jun-21	3.51	<0.1	<1.0	<1.0
18-Jun-21	3.48	<0.1	<1.0	<1.0
24-Jun-21	3.53	<0.1	<1.0	<1.0
25-Jun-21	3.28	<0.1	<1.0	<1.0
Standard	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
14-Jun-21	GM Office, Talcher Area	53.4	52.6
14-Jun-21	Near Canteen, Talcher Colliery	55.6	51.4
30-Jun-21	GM Office, Talcher Area	58.4	55.3
30-Jun-21	Near Canteen, Talcher Colliery	56.7	52.8

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--

NOISE LEVEL MONITORING DATA

AREA :

Talcher

PROJECT :

Nandira Colliery

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
14-Jun-21	Sub Station, Nandira Colliery	68.9	65.7
14-Jun-21	Project Office	60.7	58.9
30-Jun-21	Sub Station, Nandira Colliery	65.6	60.8
30-Jun-21	Project Office	68.7	65.3

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--

NOISE LEVEL MONITORING DATA

AREA :

Talcher

PROJECT :

Deulbera Colliery

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
14-Jun-21	Manager's Office	57.4	54.8
28-Jun-21	Manager's Office	59.7	59.7

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 :

Talcher

PROJECT :

Mandapal Sand Mine

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
11-Jun-21	Near Gopinathpur Village	55.0	51.6
28-Jun-21	Near Gopinathpur Village	56.8	54.1

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--

NOISE LEVEL MONITORING DATA

AREA :

Talcher

PROJECT :

Kakudi & Kishoripal Sand Mine

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
11-Jun-21	Near Kishoripal Village	57.6	55.4
28-Jun-21	Near Kishoripal Village	55.8	52.8

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-Jun-21	Talcher Colliery Sedimentation Tank Discharge ✓	6.41	<4.0	18	12		
29-Jun-21	Talcher Colliery Sedimentation Tank Discharge ✓	8.14	<4.0	36	16		

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

EFFLUENT QUALITY DATA

Area :

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-Jun-21	Nandira Colliery Sedimentation Tank Discharge ✓	7.47	<4.0	24	16		
29-Jun-21	Nandira Colliery Sedimentation Tank Discharge ✓	8.09	<4.0	32	24		

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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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Signature

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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-Jun-21	Deulbera Colliery Mine Discharge at Pit Top ✓	6.67	<4.0	20	12		
14-Jun-21	Ranipark Submersible Pump ✓	7.14	<4.0	58	32		
29-Jun-21	Deulbera Colliery Mine Discharge at Pit Top ✓	7.91	<4.0	26	16		
29-Jun-21	Ranipark Submersible Pump ✓	8.16	<4.0	24	16		

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DA/SW

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 :

Handidhua Colliery

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
14-Jun-21	19X Cut Road Bore Hole Point ✓	7.27	<4.0	44	28		
14-Jun-21	Handidhua Colliery Mine Discharge ✓	7.32	<4.0	18	12		
29-Jun-21	19X Cut Road Bore Hole Point ✓	8.06	<4.0	22	12		
29-Jun-21	Handidhua Colliery Mine Discharge ✓	8.27	<4.0	40	24		

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24/9/21

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	Acceptable	Permissible
Date of Sampling	14-Jun-2021	14-Mar-2021	Acceptable	Permissible
Colour(Hazen)	2	3	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	1	2	1	5
pH	7.56	7.40	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	56	32	200	600
Total Hardness (Ca CO ₃)(mg/L)	156	92	200	600
Iron(mg/L)	<0.1	<0.1	1.0	No relaxation
Chloride(mg/L)	14	8	250	1000
Total Dissolve Solid(mg/L)	288	106	500	2000
Calcium(mg/L)	43.29	12.83	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)	119.16	37.34	200	400
Nitrate(mg/L)	<0.5	<0.5	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)	<0.04	<0.04	5	15
Total Chromium (mg/L)	<0.01	<0.01	0.05	No relaxation
Boron(mg/L)	<0.1	<0.1	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	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	14-Jun-2021	14-Jun-2021	Acceptable	Permissible
Colour(Hazen)	1	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	1	2	1	5
pH	7.35	7.46	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	28	52	200	600
Total Hardness (Ca CO ₃)(mg/L)	96	192	200	600
Iron(mg/L)	<0.1	<0.1	1.0	No relaxation
Chloride(mg/L)	8	14	250	1000
Total Dissolve Solid(mg/L)	104	290	500	2000
Calcium(mg/L)	17.64	43.29	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)	41.82	124.34	200	400
Nitrate(mg/L)	<0.5	<0.5	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)	0.07	<0.04	5	15
Total Chromium (mg/L)	<0.01	<0.01	0.05	No relaxation
Boron(mg/L)	<0.1	<0.1	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	Deulbera U/G	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	Deulbera Manager Office Tap Water	Acceptable	Permissible
Date of Sampling	14-Jun-2021	Acceptable	Permissible
Colour(Hazen)	1	5	15
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	1	5
pH	7.77	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	88	200	600
Total Hardness (Ca CO ₃)(mg/L)	156	200	600
Iron(mg/L)	<0.1	0.3	No relaxation
Chloride(mg/L)	20	250	1000
Total Dissolve Solid(mg/L)	250	500	2000
Calcium(mg/L)	43.29	75	200
Copper(mg/L)	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	0.1	0.3
Sulphate(mg/L)	70.91	200	400
Nitrate(mg/L)	1.04	45	No relaxation
Fluoride(mg/L)	<0.30	1	1.5
Arsenic(mg/L)	<0.005	0.01	0.05
Lead(mg/L)	<0.005	0.01	No relaxation
Zinc(mg/L)	0.07	5	15
Total Chromium (mg/L)	<0.01	0.05	No relaxation
Boron(mg/L)	<0.1	0.5	1.0
Cadmium(mg/L)	<0.001	0.003	No relaxation

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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	14-Jun-2021	Acceptable	Permissible
Colour(Hazen)	3	5	15
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	3	1	5
pH	7.47	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	36	200	600
Total Hardness (Ca CO ₃)(mg/L)	156	200	600
Iron(mg/L)	<0.1	1.0	No relaxation
Chloride(mg/L)	10	250	1000
Total Dissolve Solid(mg/L)	262	500	2000
Calcium(mg/L)	32.06	75	200
Copper(mg/L)	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	0.1	0.3
Sulphate(mg/L)	125.17	200	400
Nitrate(mg/L)	<0.5	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)	0.04	5	15
Total Chromium (mg/L)	<0.01	0.05	No relaxation
Boron(mg/L)	<0.1	0.5	2.4
Cadmium(mg/L)	<0.001	0.003	No relaxation

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Surface Water Quality Data Talcher Area

Project/OCP	Nandira	IS:2296-1982 Tolerance for inland Surface water (Class C)
NAME OF STATIONS	Jambubahali Village Pond	
Date of sampling	3-May-2021	
pH	7.21	6.5-8.5
Dissolved Oxygen(mg/L)	6.7	4
BOD (3 days 27°C)(mg/L)	<2.0	3
Color (Hazen unit)	2	300
Total dissolved solids (mg/L)	246	1500
TSS(mg/L)	40	-
Total Hardness(mg/L)	152	-
Copper(mg/L)	<0.03	1.5
Iron(mg/L)	<0.1	50
Chlorides(mg/L)	14	600
Sulphate(mg/L)	52.11	400
Nitrate(mg/L)	0.72	50
Fluoride(mg/L)	<0.30	1.5
Cadmium(mg/L)	<0.001	0.01
Arsenic(mg/L)	<0.005	0.2
Lead(mg/L)	<0.005	0.1
Zinc(mg/L)	<0.04	15
Chromium(as Cr ⁶⁺)(mg/L)	<0.01	0.05
Oil & Grease (mg/L)	<4.0	0.1

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Surface Water Quality Data Talcher Area

Project/OCP	Mandapal Sand Mine		IS:2296-1982 Tolerance for inland Surface water (Class C)
NAME OF STATIONS	Upstream - At 200 m before leasehold area	Downstream - At 200 m after leasehold area	
Date of sampling	3-May-2021	3-May-2021	
pH	7.62	7.17	6.5-8.5
Dissolved Oxygen(mg/L)	6.8	7.0	4
BOD (3 days 27°C)(mg/L)	<2.0	<2.0	3
Color (Hazen unit)	2	3	300
Total dissolved solids (mg/L)	130	20	1500
TSS(mg/L)	40	18	-
Total Hardness(mg/L)	104	36	-
Copper(mg/L)	<0.03	<0.03	1.5
Iron(mg/L)	<0.1	<0.1	50
Chlorides(mg/L)	10	2	600
Sulphate(mg/L)	25.63	<1.0	400
Nitrate(mg/L)	<0.5	<0.5	50
Fluoride(mg/L)	<0.30	<0.30	1.5
Cadmium(mg/L)	<0.001	<0.001	0.01
Arsenic(mg/L)	<0.005	<0.005	0.2
Lead(mg/L)	<0.005	<0.005	0.1
Zinc(mg/L)	<0.04	<0.04	15
Chromium(as Cr ⁶⁺)(mg/L)	<0.01	<0.01	0.05
Oil & Grease (mg/L)	<4.0	<4.0	0.1

Katpanaik
Authorized Signatory
CMPDI, Ri-VII, LAB
BHUBANESWAR

DA/SW
O. I. C.
Env. Lab
CMPDI, Ri-VII
Bhubaneswar



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A Mini Ratna Company

Surface Water Quality Data Talcher Area

Project/OCP	Kakudi and Kishoripal Village		IS:2296-1982 Tolerance for inland Surface water (Class C)
	Upstream - At 200 m before leasehold area	Downstream - At 200 m after leasehold area	
NAME OF STATIONS			
Date of sampling	3-May-2021	3-May-2021	
pH	7.48	7.28	6.5-8.5
Dissolved Oxygen(mg/L)	7.2	6.9	4
BOD (3 days 27°C)(mg/L)	<2.0	<2.0	3
Color (Hazen unit)	1	3	300
Total dissolved solids (mg/L)	112	110	1500
TSS(mg/L)	26	38	-
Total Hardness(mg/L)	60	56	-
Copper(mg/L)	<0.03	<0.03	1.5
Iron(mg/L)	<0.1	<0.1	50
Chlorides(mg/L)	6	8	600
Sulphate(mg/L)	19.86	21.97	400
Nitrate(mg/L)	<0.5	<0.5	50
Fluoride(mg/L)	<0.30	<0.30	1.5
Cadmium(mg/L)	<0.001	<0.001	0.01
Arsenic(mg/L)	<0.005	<0.005	0.2
Lead(mg/L)	<0.005	<0.005	0.1
Zinc(mg/L)	<0.04	<0.04	15
Chromium(as Cr ⁶)(mg/L)	<0.01	<0.01	0.05
Oil & Grease (mg/L)	<4.0	<4.0	0.1

Haitanik
Authorized Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

[Signature]

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

Talcher Air Stations

Talcher Air monitoring stations

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Near canteen, TC

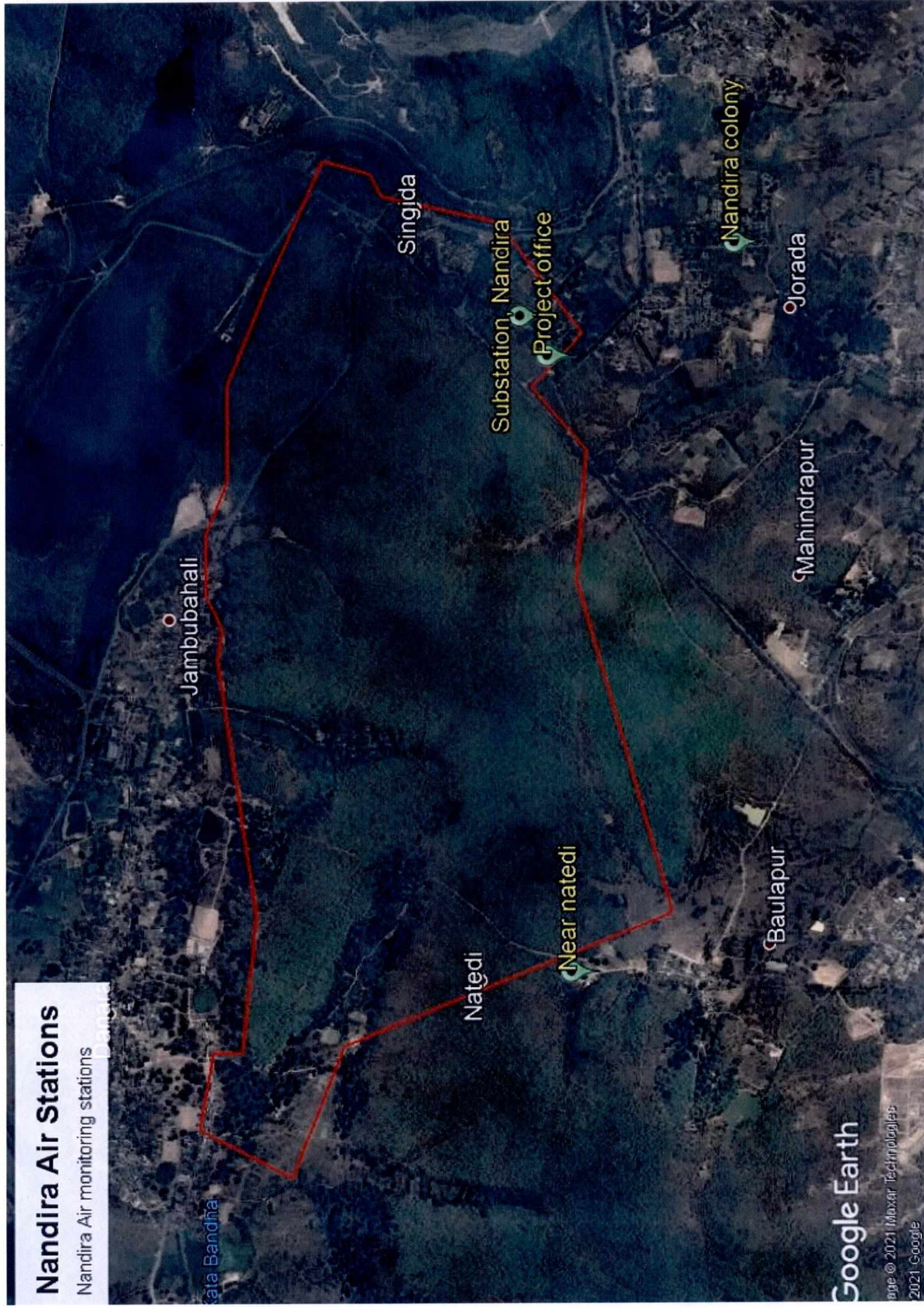
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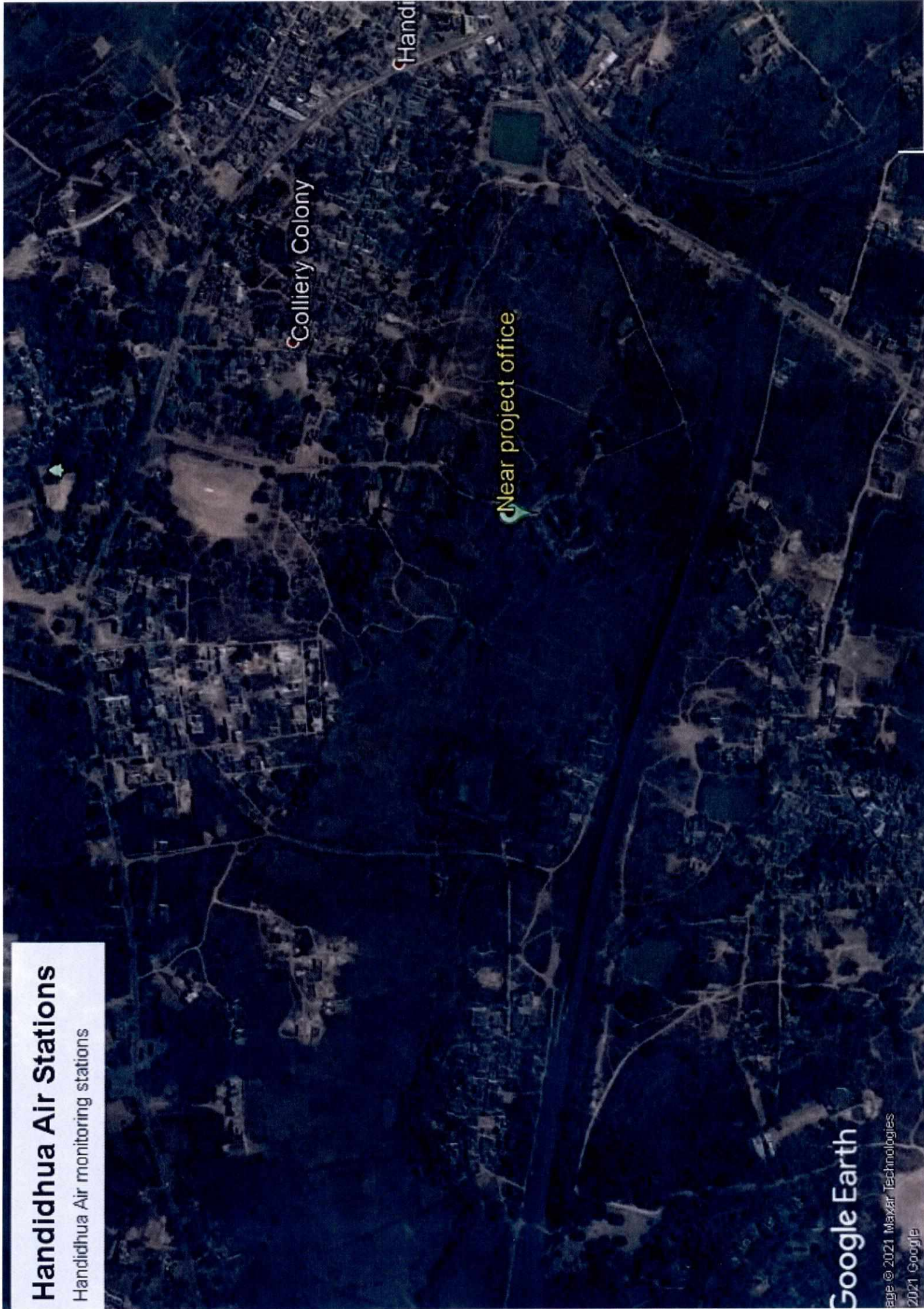
Mandapal sand mine Air Stations

Mandapal sand mine Air monitoring stations



Handidhwa Air Stations

Handidhwa Air monitoring stations



Google Earth

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Kakudi & kishoripal sand mine Air Stations

Kakudi & kishoripal sand mine Air monitoring stations

Near kishoripal village

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