



एन टी पी सी लिमिटेड
(भारत सरकार का उद्यम)
NTPC Limited
(A Govt. of India Enterprise)

तलाईपाली / Talaipalli

Ref: 1071 /TLCMP/EMG/2024/1090

Dated: 25.09.2024

To
The Member Secretary,
Chhattisgarh Environment Conservation Board,
Paryavas Bhavan, North Block Sector-19,
Atal Nagar Dist- Raipur(C.G.),

Sub: Environment Statement (Form V) for the year 2023-24 of NTPC Ltd., Talaipalli Coal Mine Project.

Ref:

- 1: EC Ltr No. J-11015/279/2009-IA.II(M) Dated 02.01.2013.
- 2: Revalidation of EC Vide Ltr No. J-11015/279/2009-IA-II(M) Dated 28.10.2015
- 3: Amendment in EC Ltr No. J-11015/279/2009-IA. II(M) Dated 06.11.2019.

Sir,

With reference to the above, Ministry of Environment, Forest and Climate Change (MoEF&CC) Granted the Environmental clearance to TLCMP, NTPC Ltd. As per Condition No. (XVIII) under general condition, EC Ltr No. J-11015/279/2009-IA. II(M) Dated 02.01.2013, please find the Environment Statement (Form V) for the year 2023-24 of NTPC Ltd., Talipalli Coal Mine Project.

Sridhar Jena
I/c- Business Unit Head
TLCMP NTPC Ltd.
एन टी पी सी लिमिटेड, NTPC Limited
Talaipalli Coal Mining Project
Vill.-Raikera, Gharghoda, Distt. Raigarh (C.G.) 496111

CC:

1. Regional Officer, Chhattisgarh Environment Conservation Board, T.V. Tower Road, Raigarh, Chhattisgarh. PIN 496001.
2. Deputy Director General of Forests (C), Integrated Regional Office, RAIPUR Ground Floor, Aranya Bhawan, North Block, Sector- 19, Naya Raipur, Atal Nagar, Chhattisgarh – Email: iro.raipur-mefcc@gov.in

तलाईपाली कोल माइनिंग परियोजना, लैलूंगा रोड, पो. ओ. : घरघोडा, जिला रायगढ़, छ.ग., पिन कोड : 496111 टेल: 07767-259201, फ़ैक्स: 07767 - 284555, ईमेल: talaipalli_mine@ntpc.co.in
Talaipalli Coal Mining Project, Lailunga Road, P.O-Gharghoda, Distt. - Raigarh, C.G, Pin Code 496111 Telephone No. 07767-259201, Fax - 07767-284555, E-mail: talaipalli_mine@ntpc.co.in
पंजीकृत कार्यालय एनटीपीसी भवन, स्कोप कॉम्प्लेक्स, 7, इंस्टीट्यूशनल एरिया, लोदी रोड, नई दिल्ली - 110003

कॉर्पोरेट पहचान नंबर L4101DL1975GOI007966, टेलीफोन नं.: 011-24387333, फ़ैक्स नं.: 011-24361018, ईमेल ntpcc@ntpc.co.in, वेबसाइट www.ntpc.co.in
Registered office: NTPC Bhawan, SCOPE Complex, 7, Institutional Area, Lodi Road, New Delhi -110003

Corporate Identification Number: L4101DL1975GOI007966, Telephone no.: 011-24387333, Fax No.: 011-24361018, E-Mail : ntpcc@ntpc.co.in, Website: www.ntpc.co.in

[FORM-V]
(See Rule 14, E(P) Rules 1986)

Environment Statement for the financial year 2022-23 ending 31st March 2024

Part A

(1) Name and address of the mine

Name: - Talaipalli Coal Mining Project, NTPC
Mining Limited
Address: - Administrative Building, Village
Raikera
Post: - Raikera, Gharghora,
Dist.: - Raigarh (Chhattisgarh) -

(2) Industry category - Primary (Coal Mining)

(3) Production capacity - 18.72 MTPA (Peak Production)

(4) Year of establishment - Mines Operation started in Oct,2019

(5) Date of the last Environmental - 30TH SEPTEMBER, 2023
Statement Submitted

PART-B

Water and Raw material Consumption:

(1) Water Consumption (m³/day)

		During Previous financial year (2022-2023)	During current financial year (2023-2024)
	A. MINING		
i	Dust suppression	300.00	1248.00
ii	Fire fighting	22.5	22.50
iii	Others (workshop etc.)	2	10.0
	B. COOLING		
	C. DOMESTIC		
i	Cleaning, Drinking	10	10.0
	TOTAL	334.50	1290.50

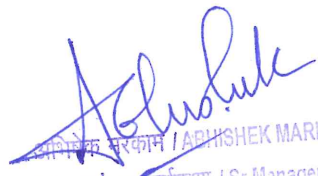

ASHISH SEKH MARKAM
Manager EMG
कोयला खनन परियोजना / Coal Mining Project
एनटीपीसी लिमिटेड / NTPC Limited
घरघोड़ा / Gharghoda

A. Process water consumption per unit of output

Name of product	Water consumption per unit of product					
	During Previous financial year (2022-2023)			During current financial year (2023-2024)		
ROM Coal	Production (T/day)	Water (Ltrs/day)	(Ltrs/Tn)	Production (T/day)	Water (Ltrs/day)	(Ltrs/Tn)
	11500	334500	29.08	20658	1290500	62.47

(ii) Raw material consumption

Name of raw material	Name of products	Consumption of raw material (per unit of output)	
		During Previous financial year (2022-2023)	During current financial year (2023-2024)
1. Explosive	Coal and OB	Coal: 0 Kg/Te (surface miner is being used for coal extraction) OB: 0.24 kg/cum	Coal: 0 Kg/Te (surface miner is being used for coal extraction) OB: 0.34 kg/cum
2. Booster		Coal: 0Kg/Te OB:0.0006 Kg/cum	Coal: 0Kg/Te OB:0.00097 Kg/cum
3. HSD		0.518 Lt/Te	2.76 Lt/Te


 अधिशेक मर्कम / ADHISHEK MARKAM
 वरिष्ठ प्रबंधक पर्यावरण / Sr Manager EMG
 तलाईपल्ली / Talaiipalli
 कोयला खनन परियोजना / Coal Mining Project
 एनटीपीसी लिमिटेड / NTPC Limited
 घरघोडा / Gharghoda

PART-C

Pollution discharged to environment/unit of output (Parameter as specified in the consent issued)

A) Water:

The analysis results reveal that all the parameters are below permissible limits prescribed by MOEF as General Standards (Effluent discharged into in land surface water.)

(Parameter as specified in the consent issued)			
Pollutants	Quantity of Pollutants Discharged (Mass / day)	Conc. of Pollutants Dis-charged (Mass/ Volume)	% of variation from pre-scribed standard with reasons
Mines Surface runoff water Quality Report (DEC, 2023)			
pH	NA	6.78	Within the Range
T.S.S	NIL	12 mg/ lit	Within the Range
Oil & Grease	NIL	BLQ(LOQ4.0)	Within the Range
BOD	NIL	8.0	Within the Range
COD	NIL	26.0	Within the Range

B) Air:

Ambient air quality result shows that the values of RPM, SPM, SO₂ and NO_x are well within pre-scribed standards.

Ambient Air Quality Monitoring (DECEMBER 2023)													
Station Name	Village	Location	अनु. क्र.	First Fortnight									
				PM ₁₀	PM _{2.5}	SO ₂	NO ₂	Hg	As	Ni	Cd	Cr	
				Limit	100.0	60.0	80.0	80.0	Not Specified	6.0	20.0	Not Specified	Not Specified
				Result	µg/m ³	µg/m ³	µg/m ³	µg/m ³		ng/m ³	ng/m ³		
AAQ1	Chhottiguda	North West side from the Center of the Coal Block (Core Zone)		65.04	34.81	13.28	29.66	ND (< 0.1)	ND (< 5.0)	ND (< 15.0)	ND (< 1.0)	ND (< 1.0)	
AAQ2	NTPC Office, Raikera	South West side from the Center of the Coal Block (Core Zone)		54.18	27.82	12.58	26.64	ND (< 0.1)	ND (< 5.0)	ND (< 15.0)	ND (< 1.0)	ND (< 1.0)	
AAQ3	Kudurmoha	North Eastern side from the Center of the Coal Block		68.05	38.04	13.25	25.09	ND (< 0.1)	ND (< 5.0)	ND (< 15.0)	ND (< 1.0)	ND (< 1.0)	
AAQ4	Naya Rampur	South East side from the Center of the Coal Block (Core Zone)		56.01	23.74	10.58	20.67	ND (< 0.1)	ND (< 5.0)	ND (< 15.0)	ND (< 1.0)	ND (< 1.0)	
AAQ5	Kotrimal	Western side of the Coal Block (Buffer Zone)		59.07	28.46	13.67	25.04	ND (< 0.1)	ND (< 5.0)	ND (< 15.0)	ND (< 1.0)	ND (< 1.0)	
AAQ6	Chimtapani	Northern side of the Coal Block (Buffer Zone)		58.15	25.66	12.59	24.63	ND (< 0.1)	ND (< 5.0)	ND (< 15.0)	ND (< 1.0)	ND (< 1.0)	
AAQ7	Pelma	Eastern side of the Coal Block (Buffer Zone)		66.07	25.14	11.86	22.04	ND (< 0.1)	ND (< 5.0)	ND (< 15.0)	ND (< 1.0)	ND (< 1.0)	
AAQ8	Raikera	South Side of the Coal Block		60.11	28.97	11.58	26.34	ND (< 0.1)	ND (< 5.0)	ND (< 15.0)	ND (< 1.0)	ND (< 1.0)	


 अशिश मार्कम / ASHISH MARKAM
 वरिष्ठ प्रबंधक पर्यावरण / Sr Manager EMG
 तलाईपल्ली / Talaiipalli
 कोयला खनन परियोजना / Coal Mining Project
 एनटीपीसी लिमिटेड / NTPC Limited
 घरघोडा / Gharghoda

Ambient Air Quality Monitoring (MARCH 2024)													
Station Name	Village	Location		First Fortnight									
				PM ₁₀	PM _{2.5}	SO ₂	NO ₂	Hg	As	Ni	Cd	Cr	
				Limit	100.0	60.0	80.0	80.0	Not Specified	6.0	20.0	Not Specified	Not Specified
				Result	µg/m ³	µg/m ³	µg/m ³	µg/m ³		ng/m ³	ng/m ³		
AAQ1	Chhottiguda	North West side from the Center of the Coal Block (Core Zone)		62.98	42.45	11.45	26.23	ND (< 0.1)	ND (< 5.0)	ND (< 15.0)	ND (< 1.0)	ND (< 1.0)	
AAQ2	NTPC Office, Raikera	South West side from the Center of the Coal Block (Core Zone)		63.22	42.98	14.15	25.77	ND (< 0.1)	ND (< 5.0)	ND (< 15.0)	ND (< 1.0)	ND (< 1.0)	
AAQ3	Kudurmoha	North Eastern side from the Center of the Coal Block		62.77	43.26	14.10	25.77	ND (< 0.1)	ND (< 5.0)	ND (< 15.0)	ND (< 1.0)	ND (< 1.0)	
AAQ4	Naya Rampur	South East side from the Center of the Coal Block (Core Zone)		61.66	48.98	12.88	24.74	ND (< 0.1)	ND (< 5.0)	ND (< 15.0)	ND (< 1.0)	ND (< 1.0)	
AAQ5	Kotrimal	Western side of the Coal Block (Buffer Zone)		63.64	47.85	13.26	23.47	ND (< 0.1)	ND (< 5.0)	ND (< 15.0)	ND (< 1.0)	ND (< 1.0)	
AAQ6	Chimtapani	Northern side of the Coal Block (Buffer Zone)		63.12	45.26	14.55	24.62	ND (< 0.1)	ND (< 5.0)	ND (< 15.0)	ND (< 1.0)	ND (< 1.0)	
AAQ7	Pelma	Eastern side of the Coal Block (Buffer Zone)		63.10	42.65	14.23	26.77	ND (< 0.1)	ND (< 5.0)	ND (< 15.0)	ND (< 1.0)	ND (< 1.0)	
AAQ8	Raikera	South Side of the Coal Block		63.74	46.21	14.11	26.29	ND (< 0.1)	ND (< 5.0)	ND (< 15.0)	ND (< 1.0)	ND (< 1.0)	

Copy of the sample Analysis report by M/s Hubert Enviro Care Labs Pvt. Ltd. & Vardan Envirolab is enclosed as Annexure-1

PART – D

Hazardous Wastes

(As specified under Hazardous Waste/ Management and Handling Rules, 1986)

Sl no	Hazardous waste	Total quantity	
		During current financial year (2022-2023)	During current financial year (2023-2024)
(a)	From process	Nil	Nil
(b)	From pollution control facility	Nil	Nil
(c)	Used oil	Nil	Nil


 अभिषेक मरकाम / ABHISHEK MARKAM
 वरिष्ठ प्रबंधक पर्यावरण / Sr Manager EMG
 तलाईपल्ली / Talaipalli
 कोयला खनन परियोजना / Coal Mining Project
 एनटीपीसी लिमिटेड / NTPC Limited
 घरघोडा / Gharghoda

PART-E

Solid Waste

SI no	Solid Waste	Total quantity	
		During current financial year (2022-2023)	During current financial year (2023-2024)
(a)	From process: (Overburden and Intercalated)	15815814.30 (CuM)	32111934.23 (CuM)
(b)	From pollution control facility	Nil	Nil
(c)	(1) Quantity recycled or re-utilized within the unit	Nil	Nil
	(2) Sold	Nil	Nil
	(3) Disposed	Kept within ML area	Kept within ML area

PART-F

Please specify the characteristics (in terms of composition and quantum) of Hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

- ✦ NTPC Mining Limited obtained Hazardous Waste Authorization through CECB vide letter no 10096/HSMD/HO/CECB/2024 dated 18.03.2024.
- ✦ Authorization obtained for Used or Spent oil, empty barrels with hazardous chemicals & Contaminated cotton rags for Annual Quantity of 220 KL, 18 MT & 0.5 MT respectively.
- ✦ The hazardous waste shall be disposed off through authorized recyclers and contaminated cotton will be sent to coprocessing in cement kiln.
- ✦ Hazardous waste storage facilities have been created at site and are being used to store hazardous waste generated.
- ✦ Inventory of hazardous waste generated stored and disposed in being carried out as per standard.
- ✦ The generation of OB & Intercalated waste is dumped in earmarked area as per approved mining plan & scheme with following mitigate measures such as proper sloping, terracing, and toe retention wall & garland drainage.


अभिषेक मरकाम / ABHISHEK MARKAM
वरिष्ठ प्रबंधक पर्यावरण / Sr Manager EMG
तलाईपल्ली / Talaiipalli
कोयला खनन परियोजना / Coal Mining Project
एनटीपीसी लिमिटेड / NTPC Limited
घरघोड़ा / Gherghoda

PART-G

Impact of the pollution abatement measures taken on conservation of natural re-sources and on the cost of the production

- ✚ The massive plantation has been done at mines boundary, viewpoint, topsoil dump and local villages.
- ✚ The topsoil is stored in a proper manner and the same has been utilized by stowing grassseeds.
- ✚ Garland drainage, Hume pipes and check dam are provided to mines dump and soil erosion areas.
- ✚ 11 Nos. of Water recharge structures constructed at Naya Rampur Pond.
- ✚ 3 Digital Flowmeters installed to measure the quantity of water utilized for various mining and domestic purpose.
- ✚ Truck mounted fog cannon is used for dust suppression in coal transit locations in mines.

PART-H

Additional measures/investment proposal for environmental protection including abatement of pollution, prevention of pollution

- ✚ Water sprinkling through mobile water tankers for mines dispatch road, haul road dust suppression.
- ✚ 11 Recharge Pond structures has been implemented at Naya Rampur ponds to increase the water table.
- ✚ Dust extraction and wetting process are being used for drilling process.
- ✚ Plantation in Site office areas, mine boundary, Nearby Villages, viewpoint areas and dump areas
- ✚ Grass seeds stowing over Topsoil dumps for better stabilization and soil fertility conservation.
- ✚ Pond deepening & beautification works at village Salhaepali and Kudumkela executed.
- ✚ 2 piezometers have been installed to give online continuous data of ground water level.
- ✚ Installation of permanent water sprinklers along main approach road is under progress.
- ✚ Construction of wind barrier for 100 m length along wharfwall in progress.
- ✚ 50 KL ETP is under installation at East Pit workshop.


अभिषेक मरकम / ABHISHEK MARKAM
वरिष्ठ प्रबंधक पर्यावरण / Sr Manager EMG
तलाईपल्ली / Talaiipalli
कोयला खनन परियोजना / Coal Mining Project
एनटीपीसी लिमिटेड / NTPC Limited
घरघोड़ा / Gharghoda

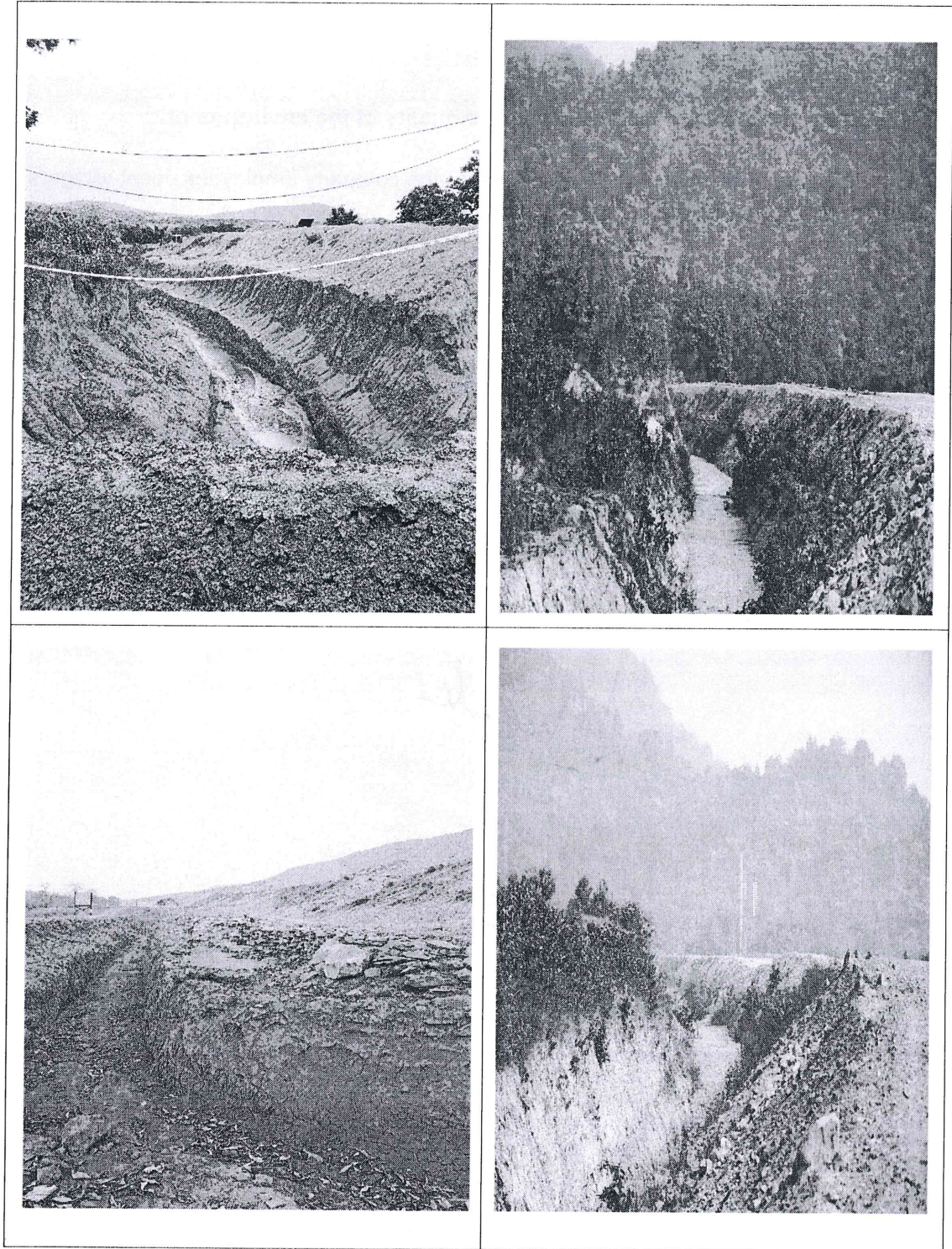
PART-I

Any other particulars for improving the quality of the environment

- ✦ Regular awareness program is given to the company employees, local villagers and school children towards environment and pollution.
- ✦ Environment awareness among Girl Empowerment Mission participants is being done along with tree distribution among children.
- ✦ Additional 02 nos CAAQMS procured to monitor air quality will be in
- ✦ The world environmental day, ozone day & safety day has been celebrated regularly along with school children's & company employee's, the celebration was followed through environ- mental awareness program.

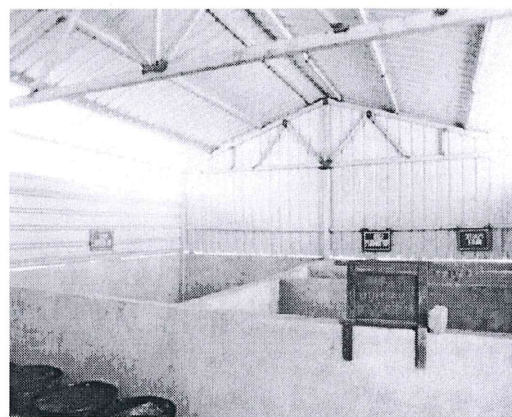
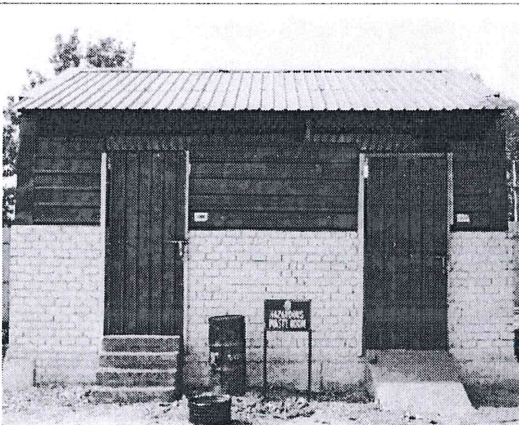
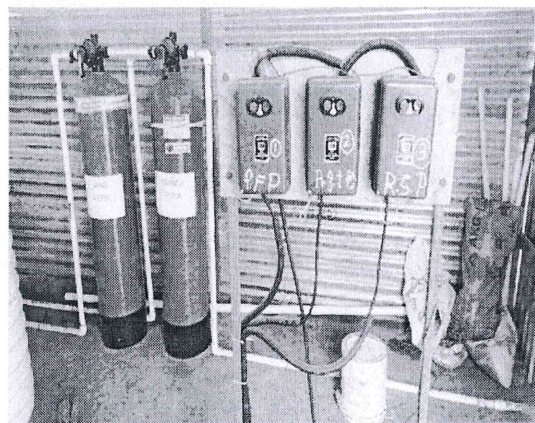
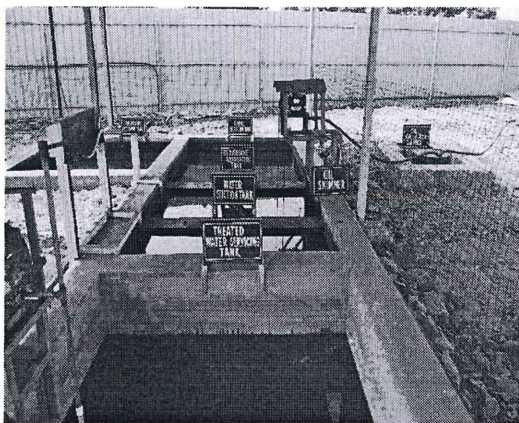
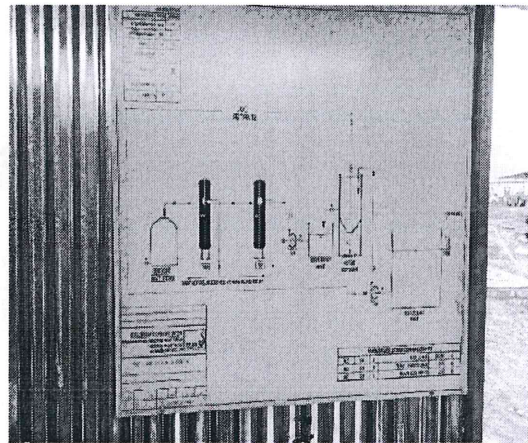
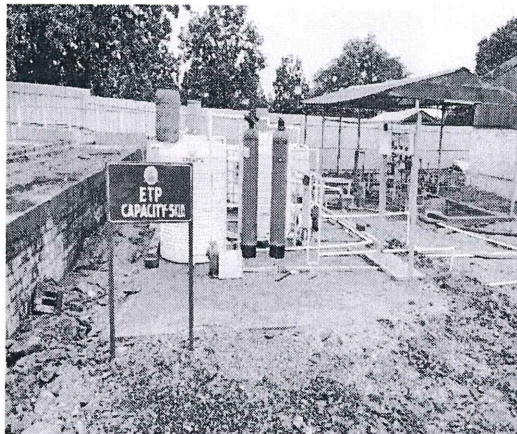


अभिषेक मरकाम / ABHISHEK MARKAM
वरिष्ठ प्रबंधक पर्यावरण / Sr Manager EMG
तलाईपल्ली / Talaiipalli
कोयला खनन परियोजना / Coal Mining Project
एनटीपीसी लिमिटेड / NTPC Limited
घरघोड़ा / Charghoda



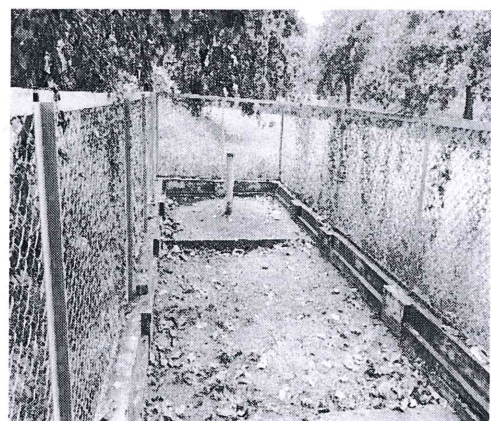
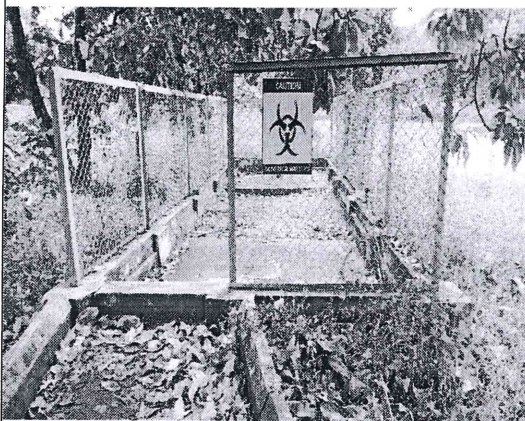
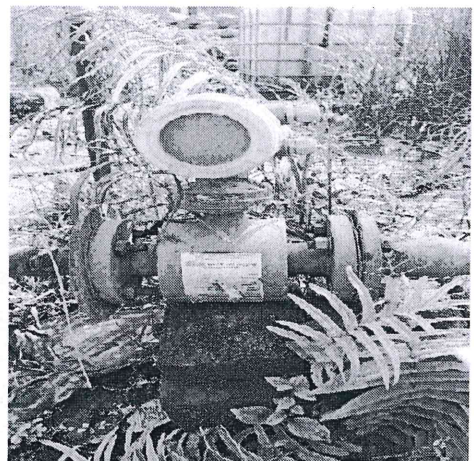
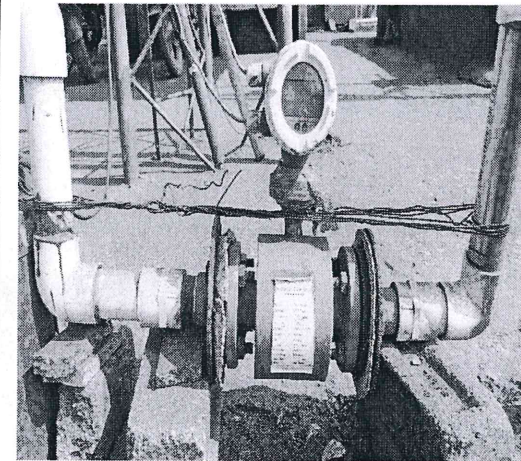
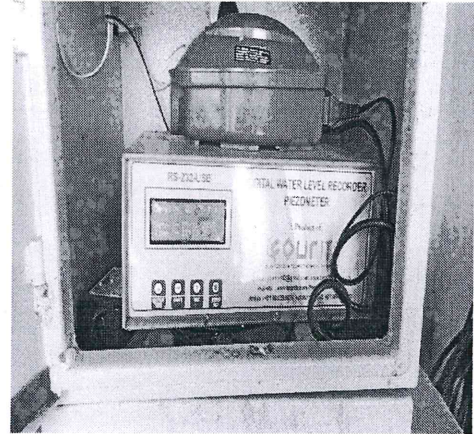
GARLAND DRAINS ALONG THE MINE BOUNDARY AND OB DUMPS


 अभिशेक मार्कम / ASHISHEK MARKAM
 वरिष्ठ प्रबंधक पर्यावरण / Sr Manager EMG
 तलाईपल्ली / Talaipalli
 कोयला खनन परियोजना / Coal Mining Project
 एनटीपीसी लिमिटेड / NTPC Limited
 गारहोदा / Gharhoda



EFFLUENT TREATMENT PLANT AND HAZARDOUS WASTE FACILITY

Abhishek Markam
 अभिशेक मरकम / ABHISHEK MARKAM
 वरिष्ठ प्रबंधक पर्यावरण / Sr Manager EMG
 तलाईपल्ली / Talaiipalli
 कोयला खनन परियोजना / Coal Mining Project
 एनटीपीसी लिमिटेड / NTPC Limited
 घरघोड़ा / Gharghoda



FLOW METER, PIEZOMETER & BIO MEDICAL WASTE FACILITY AT SITE OFFICE

Abhishek

अभिषेक मर्कम / ABHISHEK MARKAM

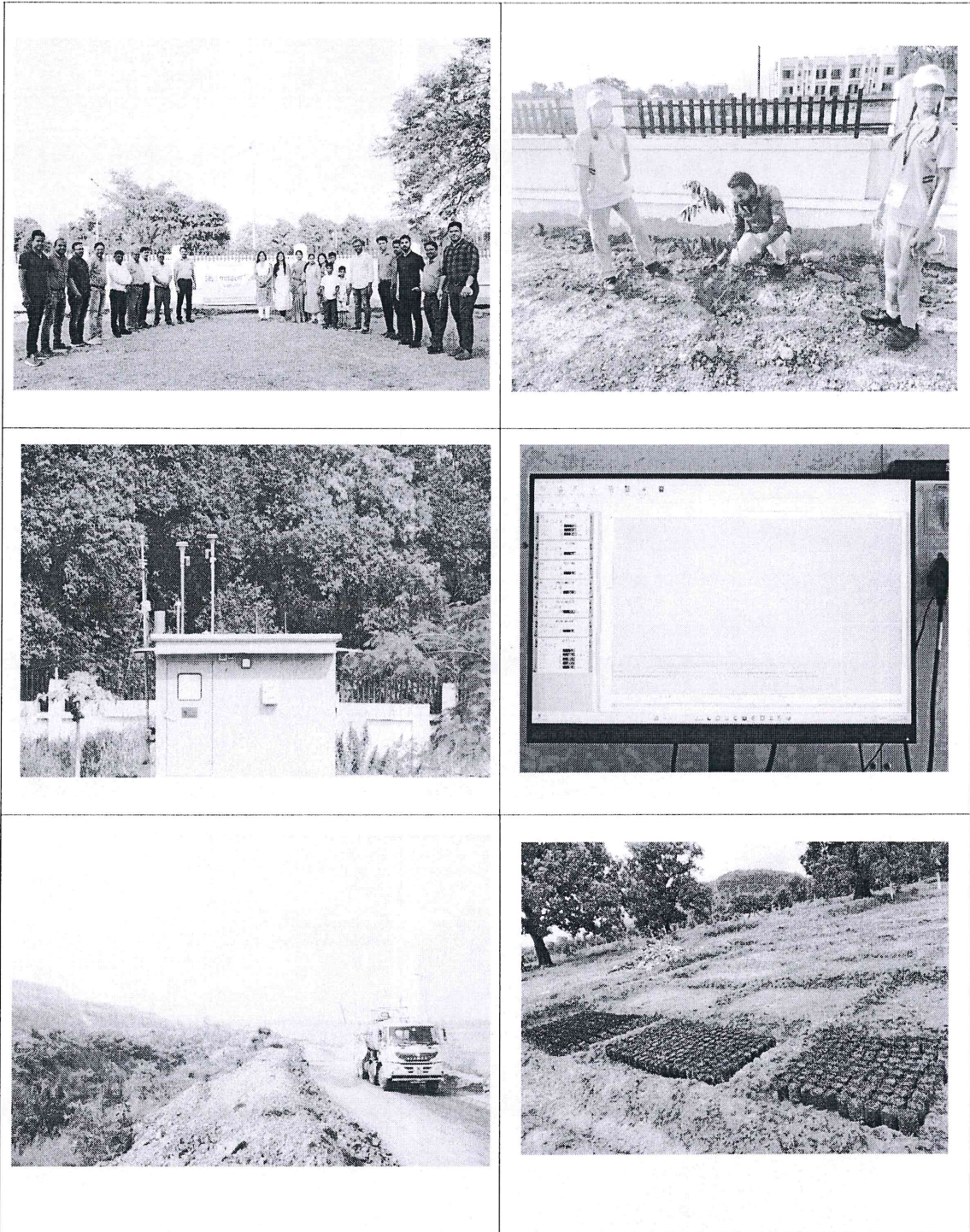
वरिष्ठ प्रबंधक पर्यावरण / Sr Manager EMG

तलाईपल्ली / Talaipalli

कोयला खनन परियोजना / Coal Mining Project

एनटीपीसी लिमिटेड / NTPC Limited

घरगोडा / Gharghoda

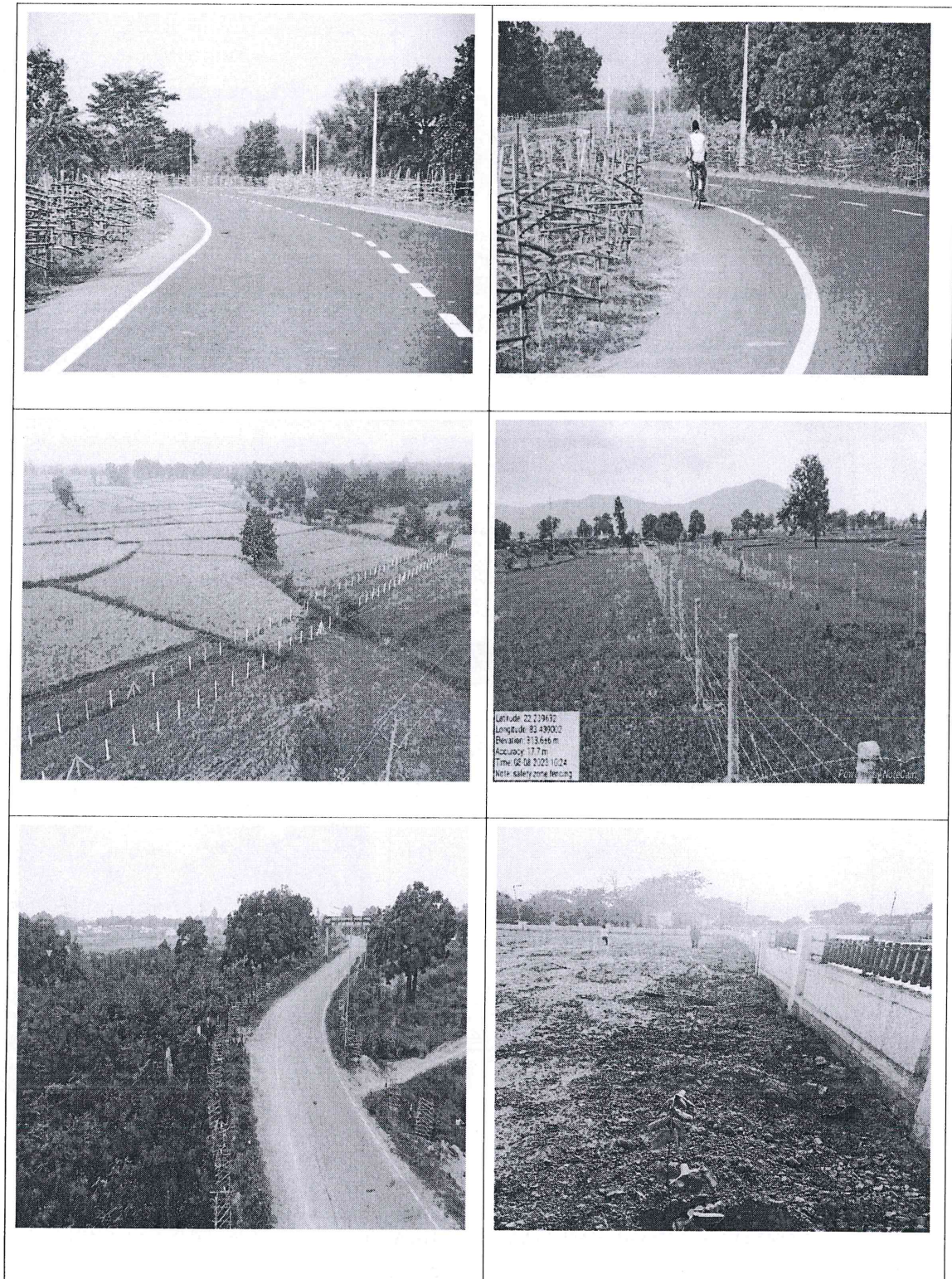


WORLD ENVIRONMENT DAY CELEBRATION, CAAQMS, DUST SUPPRESSION

Ashish

अभिषेक मरकम / ABHISHEK MARKAM
 चरिष्ठ प्रबंधक पर्यावरण / Sr Manager EMG

तालाईपल्ली / Talaiipalli
 कोयला खनन परियोजना / Coal Mining Project
 एनटीपीसी लिमिटेड / NTPC Limited
 घरघोड़ा / Gharghoda



PLANTATION CARRIED OUT IN LAST FINANCIAL YEAR

Abhishek
अभिषेक मार्कम / ABHISHEK MARKAM

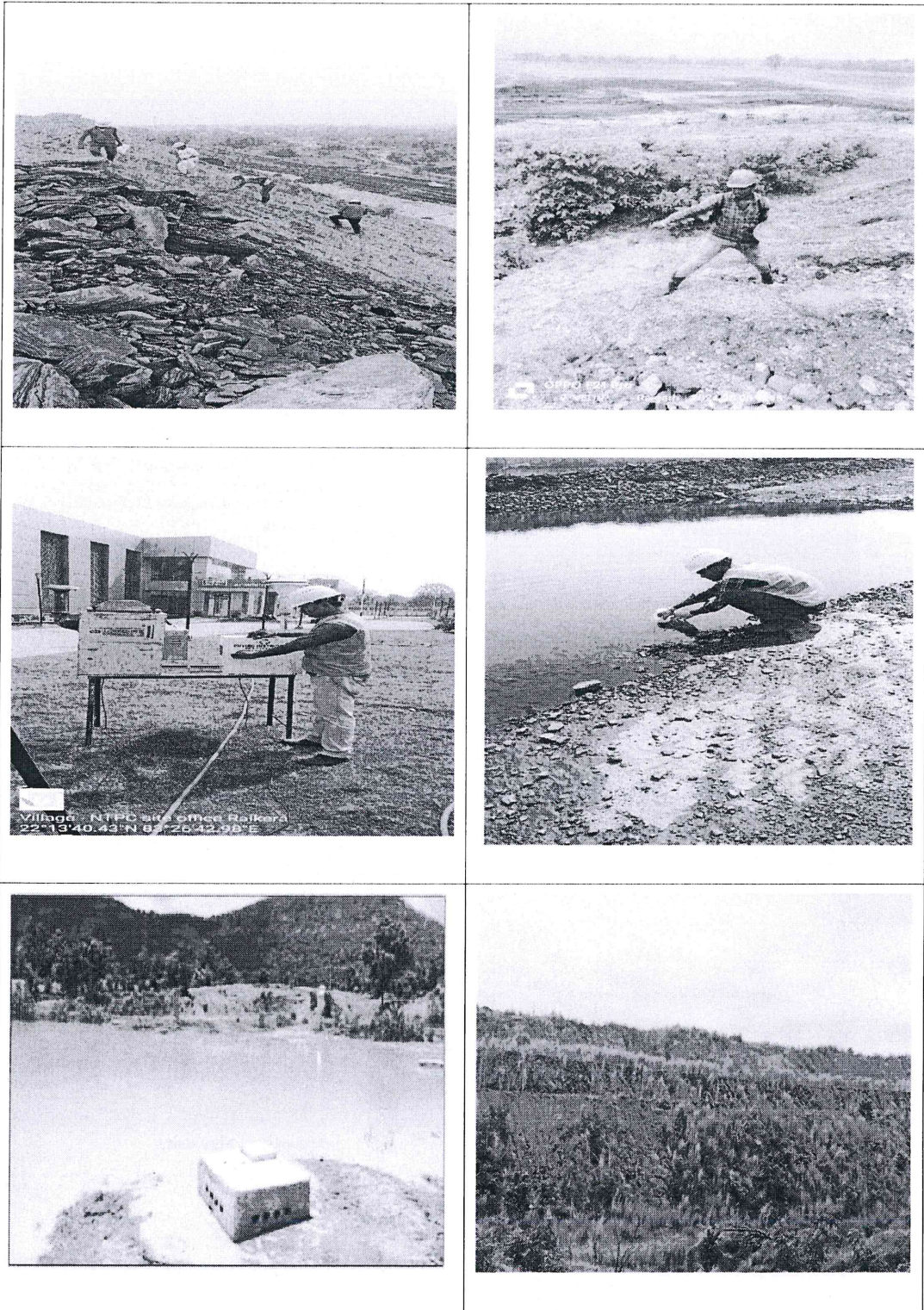
वरिष्ठ प्रबंधक पर्यावरण / Sr Manager EMG

तलाईपल्ली / Talaipalli

कोयला खनन परियोजना / Coal Mining Project

एनटीपीसी लिमिटेड / NTPC Limited

एनटीपीसी लिमिटेड, कोयला खनन परियोजना, तलाईपल्ली, तमिल नाडु



POLLUTION MONITORING, RECHARGE STRUCTURES


 अभिशेक मरकाम / ABHISHEK MARKAM
 चरिष्ठ प्रबंधक पर्यावरण / Sr Manager EMG
 तलाईपल्ली / Talaipalli
 कोयला खनन परियोजना / Coal Mining Project
 एनटीपीसी लिमिटेड / NTPC Limited
 घरघोडा / Gharghoda

2.2 Ambient Air Quality – Test Results

Following tables explain the test results as per the given sample description.

Sample Description No. HECS/AA/010/030323	
Sample Location	Chotiguda Village
Type of Sample	Ambient Air
Date of Sampling	03/03/2023 To 04/03/2023
Test Parameters	As per scope of work

S.No	Parameters	Units	Results Obtained	Test Method	NAAQ Standards: 2009	
1	Sulphur Dioxide	$\mu\text{g}/\text{m}^3$	11.47	CPCB guide lines Volume 1, 2012	80 (24 hours)	50 (Annual)
2	Nitrogen Dioxide	$\mu\text{g}/\text{m}^3$	20.36	IS: 5182 (Part - 6) 2006	80 (24 hours)	40 (Annual)
3	Particulate Matter Size Less than 10 μm	$\mu\text{g}/\text{m}^3$	52.14	IS: 5182 (Part - 23) 2006	100 (24 hours)	60 (Annual)
4	Particulate Matter Size Less than 2.5 μm	$\mu\text{g}/\text{m}^3$	23.96	IS: 5182 (Part - 24) 2019	60 (24 hours)	40 (Annual)

Notes: BLQ - Below the Limit of Quantification, LOQ- Limit of Quantification, $\mu\text{g}/\text{m}^3$ -Micrograms per cubic meter.



M. [Signature]
Authorized Signatory

Hubert Enviro Care Systems (P) Ltd.

[Signature]
अभिषेक प्रसाद / ABHISEK MARKAM
वरिष्ठ प्रबंधक पर्यावरण / Sr Manager EMG
तलाईपल्ली / Talaiipalli
कोयला खनन परियोजना / Coal Mining Project
एनटीपीसी लिमिटेड / NTPC Limited
घरघोड़ा / Gharghoda

2.2 Ambient Air Quality – Test Results

Following tables explain the test results as per the given sample description.

Sample Description No. HECSL/AA/011/100523	
Sample Location	Raikera Sidar Para
Type of Sample	Ambient Air
Date of Sampling	08/05/2023-09/05/2023
Test Parameters	As per scope of work

S No.	Parameters	Units	Results Obtained	Test Method	NAAQ Standards: 2009	
1.	Sulphur Dioxide	$\mu\text{g}/\text{m}^3$	12.67	CPCB guide lines Volume 1, 2012	80 (24 hours)	50 (Annual)
2.	Nitrogen Dioxide	$\mu\text{g}/\text{m}^3$	20.33	IS: 5182 (Part - 6) 2006	80 (24 hours)	40 (Annual)
3.	Particulate Matter Size Less than 10 μm	$\mu\text{g}/\text{m}^3$	53.25	IS: 5182 (Part - 23) 2006	100 (24 hours)	60 (Annual)
4.	Particulate Matter Size Less than 2.5 μm	$\mu\text{g}/\text{m}^3$	23.16	IS: 5182 (Part - 24) 2019	60 (24 hours)	40 (Annual)

Note:- BLQ - Below the Limit of Quantification, LOQ- Limit of Quantification, $\mu\text{g}/\text{m}^3$ -Micrograms per cubic meter.



Authorized Signatory

Hubert Enviro Care Systems (P) Ltd.

Adhishek Markam
 अभिषेक मरकम / ADHISHEK MARKAM
 वरिष्ठ प्रबंधक पर्यावरण / Sr Manager EMG
 तलाईपल्ली / Talaiipalli
 कोयला खनन परियोजना / Coal Mining Project
 एनटीपीसी लिमिटेड / NTPC Limited
 घरघोडा / Gharghoda

3.3 Effluent Water Quality – Test Results

The following tables explain the test results as per the given sample description:

Sample Description No. HECS/WW/001/200423					
Sample Location		TLCMP West Pit			
Type of Sample		Industrial Effluent Water			
Date of Sampling		14/04/2023			
Test Parameters		As per Scope of Work			
Nature of Sampling		Spot			
S. No.	Parameters	Results	Limits (As per E.P. Act)		
			Inland Surface water	Public Sewer	Land for Irrigation
1	Colour (Hazen)	BLQ(LOQ 1.0)	-	-	-
2	Odour	Agreeable	-	-	-
3	Electrical Conductivity (µS/cm)	128.0	-	-	-
4	pH	6.50	5.5-9.0	5.5-9.0	5.5-9.0
5	Total Suspended Solids, (mg/l)	9.0	100	600	200
6	BOD (3 days at 27°C), (mg/l)	5.0	30	350	100
7	COD, (mg/l)	20.0	250	-	-
8	Oil & Grease, (mg/l)	BLQ(LOQ 4.0)	10	20	10
9	Total Dissolved Solids, (mg/l)	85.0	500	1500	2100
10	Iron as Fe(mg/l)	BLQ(LOQ:0.02)	-	-	-
11	Manganese as Mn(mg/l)	BLQ(LOQ:0.05)	-	-	-
12	Chloride as Cl(mg/l)	39.0	1000	1000	600


Authorized Signatory


अभिषेक मरकम / ABHISHEK MARKAM
वरिष्ठ प्रबंधक पर्यावरण / Sr Manager EMG
तलाईपल्ली / Talaiipalli
कोयला खनन परियोजना / Coal Mining Project
एनटीपीसी लिमिटेड / NTPC Limited
घरघोडा / Gharghoda

Sample Description No. HECS/WW/004/280423					
Sample Location		TLCMP South Pit			
Type of Sample		Industrial Effluent Water			
Date of Sampling		26/04/2023			
Test Parameters		As per Scope of Work			
Nature of Sampling		Spot			
S. No.	Parameters	Results	Limits (As per E.P. Act)		
			Inland Surface water	Public Sewer	Land for Irrigation
1	Colour (Hazen)	BLQ(LOQ 1.0)	-	-	-
2	Odour	Agreeable	-	-	-
3	Electrical Conductivity ($\mu\text{S}/\text{cm}$)	122.6	-	-	-
4	pH	6.41	5.5-9.0	5.5-9.0	5.5-9.0
5	Total Suspended Solids, (mg/L)	2.0	100	600	200
6	BOD (3 days at 27°C), (mg/L)	5.0	30	350	100
7	COD, (mg/L)	22.0	250	-	-
8	Oil & Grease, (mg/L)	BLQ(LOQ 4.0)	10	20	10
9	Total Dissolved Solids, (mg/L)	82.0	500	1500	2100
10	Iron as Fe (mg/l)	BLQ(LOQ:0.02)	-	-	-
11	Manganese as Mn (mg/l)	BLQ(LOQ:0.05)	-	-	-
12	Chloride as Cl (mg/l)	33.0	1000	1000	600




Authorized Signatory


अभिषेक मरकम / ABHISHEK MARKAM
वरिष्ठ प्रबंधक पर्यावरण / Sr Manager EMG
तलाईपल्ली / Talaipalli
कोयला खनन परियोजना / Coal Mining Project
एनटीपीसी लिमिटेड / NTPC Limited
घरघोडा / Gharghoda

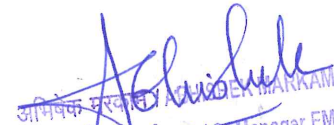
4.3 Surface Water Quality – Test Results

Page: 1 of 4

Sample Description No. HECSL/WT/003/260423	
Sample Location	Chintapani
Type of Sample	Surface Water
Date of Sampling	25/04/2023
Test Parameters	As per Scope of Work
Nature of Sampling	Spot

S.No.	Parameters	Units	Results	Test Method	IS:10500-2012	
					Acceptable Limits	Permissible Limits
1	pH (at 25°C)	-	6.81	IS 3025(Part-11):2012	6.5 - 8.5	No Relaxation
2	Colour	Hazen/Unit	10.0	IS 3025(Part-4):2021	5	15
3	Turbidity	NTU	211.0	IS 3015(Part-10):1984	1	5
4	Odour	-	Agreeable	IS 3025(Part-5):1983	Agreeable	Agreeable
5	Taste	-	Disagreeable	IS 3025(Part-8):1984	Agreeable	Agreeable
6	Total Hardness as CaCO ₃	mg/l	58.0	IS 3025(Part-21):2009	200	600
7	Calcium as Ca	mg/l	13.62	IS 3025(Part-40):1991	75	200
8	Total Alkalinity as CaCO ₃	mg/l	50.0	IS 3025(Part-23):1986	200	600
9	Chloride as Cl	mg/l	19.79	4500 Cl ⁻ - BAPHA 2.6 (I Edn, 2017)	250	1000
10	Residual free Chlorine	mg/l	BLQ(LOQ:0.1)	IS 3025(Part-26):1986	0.2	1
11	Magnesium as Mg	mg/l	5.83	IS 3025(Part-46):1994	30	100
12	Total Dissolved Solids	mg/l	116.0	IS 3025(Part-16):1984	500	2000
13	Sulphate as SO ₄	mg/l	27.4	IS 3025(Part-24):Sec 1:2022	200	400
14	Fluoride	mg/l	BLQ(LOQ:0.2)	IS 3025(Part-60):2008	1.0	1.5
15	Nitrate as NO ₃	mg/l	3.91	IS 3025(Part-34):Sec 3:2021	45	No Relaxation
16	Iron as Fe	mg/l	2.38	IS 3025(Part-53):2003	1.0	No Relaxation
17	Aluminium as Al	mg/l	BLQ(LOQ:0.03)	IS 3025(Part-55):2003	0.03	0.2
18	Boron as B	mg/l	BLQ(LOQ:0.1)	IS 3025(Part-57):2021	0.5	1.0
19	Phenolic compounds as C ₆ H ₅ OH	mg/l	BLQ(LOQ:0.001)	APHA 23rd edition, Method 5530C, 2017	0.001	0.002
20	Anionic Detergents as MBAS	mg/l	BLQ(LOQ:0.05)	Amesko IS13428:2005	0.2	1.0


 Authorized Signatory


 अभिवेक इन्वैरन्मेंटल सर्विस प्रिवेट लिमिटेड / Sr. Manager EMG
 तलाईपल्ली / Talaipalli
 कोयला खनन परियोजना / Coal Mining Project
 एनटीपीसी लिमिटेड / NTPC Limited
 घरघोड़ा / Gharghoda

Sample Description No. HECSL/WT/003/260423	
Sample Location	Chintapani
Type of Sample	Surface Water
Date of Sampling	25/04/2023
Test Parameters	As per Scope of Work
Nature of Sampling	Spot

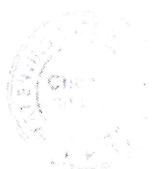
S.No.	Parameters	Units	Results	Test Method	IS:10500-2012	
					Acceptable Limits	Permissible Limits
21	Zinc as Zn	mg/l	BLQ(LOQ 0.1)	USEPAMethod200.8:1994	5	15
22	Copper as Cu	mg/l	BLQ(LOQ 0.01)	USEPAMethod200.8:1994	0.05	1.5
23	Manganese as Mn	mg/l	BLQ(LOQ 0.05)	USEPAMethod200.8:1994	0.1	0.3
24	Cadmium as Cd	mg/l	BLQ(LOQ 0.001)	USEPAMethod200.8:1994	0.003	No Relaxation
25	Lead as Pb	mg/l	BLQ(LOQ 0.005)	USEPAMethod200.8:1994	0.01	No Relaxation
26	Selenium as Se	mg/l	BLQ(LOQ 0.005)	USEPAMethod200.8:1994	0.01	No Relaxation
27	Mercury as Hg	mg/l	BLQ(LOQ 0.0005)	USEPAMethod200.8:1994	0.001	No Relaxation
28	Mineral Oil	mg/l	BLQ(LOQ 0.5)	IS 3025 (Part 39):1991	0.5	No Relaxation
29	Sulphides as S ²⁻	mg/l	BLQ(LOQ 0.04)	IS 3025 (Part 29):1986	0.05	No Relaxation
30	Pesticides					
	Alpha HCH	mg/l	BLQ(LOQ 0.00001)	USEPAMethod525.2:1995	0.00001	No Relaxation
	Beta HCH	mg/l	BLQ(LOQ 0.00001)	USEPAMethod525.2:1995	0.00001	No Relaxation
	Gamma HCH (Lindane)	mg/l	BLQ(LOQ 0.00001)	USEPAMethod525.2:1995	0.002	No Relaxation
	Delta HCH	mg/l	BLQ(LOQ 0.00001)	USEPAMethod525.2:1995	0.00001	No Relaxation
	O.P. DDT	mg/l	BLQ(LOQ 0.00001)	USEPAMethod525.2:1995	0.001	No Relaxation
	P.P. DDT	mg/l	BLQ(LOQ 0.00001)	USEPAMethod525.2:1995	0.001	No Relaxation
	O.P. DDD	mg/l	BLQ(LOQ 0.00001)	USEPAMethod525.2:1995	0.001	No Relaxation
	P.P. DDD	mg/l	BLQ(LOQ 0.00001)	USEPAMethod525.2:1995	0.001	No Relaxation
	O.P. DDE	mg/l	BLQ(LOQ 0.00001)	USEPAMethod525.2:1995	0.001	No Relaxation
	P.P. DDE	mg/l	BLQ(LOQ 0.00001)	USEPAMethod525.2:1995	0.001	No Relaxation
	Alpha Endosulfan	mg/l	BLQ(LOQ 0.00001)	USEPAMethod525.2:1995	0.0004	No Relaxation


 Authorized Signatory


 अभिशेक मरकम / ABHISHEK MARKAM
 वरिष्ठ प्रबंधक पर्यावरण / Sr Manager EMG
 तलाईपल्ली / Talaiipalli
 कोयला खनन परियोजना / Coal Mining Project
 एनटीपीसी लिमिटेड / NTPC Limited
 घरघोड़ा / Gharghoda

Sample Description No. HEC/SL/WT/003/260423	
Sample Location	Chintapani
Type of Sample	Surface Water
Date of Sampling	25/04/2023
Test Parameters	As per Scope of Work
Nature of Sampling	Spot

S.No.	Parameters	Units	Results	TestMethod	IS: 10500:2012	
					Acceptable Limits	Permissible Limits
	Beta Endosulphan	mg/l	BLQ(LOQ 0.00001)	USEPAMethod525.2:1995	0.0004	NoRelaxation
	Endosulfansulphate	mg/l	BLQ(LOQ 0.00001)	USEPAMethod525.2:1995	0.0004	NoRelaxation
	Chlorpyrifos	mg/l	BLQ(LOQ 0.00001)	USEPAMethod525.2:1995	0.03	NoRelaxation
	Butachlor	mg/l	BLQ(LOQ 0.00001)	USEPAMethod525.2:1995	0.125	NoRelaxation
	Alachlor	mg/l	BLQ(LOQ 0.00001)	USEPAMethod525.2:1995	0.02	NoRelaxation
	Atrazine	mg/l	BLQ(LOQ 0.00001)	USEPAMethod525.2:1995	0.002	NoRelaxation
	Aldrin	mg/l	BLQ(LOQ 0.00001)	USEPAMethod525.2:1995	0.00003	NoRelaxation
	Dieldrin	mg/l	BLQ(LOQ 0.00001)	USEPAMethod525.2:1995	0.00003	NoRelaxation
	Monocrotophos	mg/l	BLQ(LOQ 0.00001)	USEPAMethod8321B:2007	0.001	NoRelaxation
	Ethion	mg/l	BLQ(LOQ 0.00001)	USEPAMethod525.2:1995	0.003	NoRelaxation
	Phorate	mg/l	BLQ(LOQ 0.00001)	USEPAMethod525.2:1995	0.002	NoRelaxation
	2,4-D	mg/l	BLQ(LOQ 0.00001)	USEPAMethod8321B:2007	0.03	NoRelaxation
	Isoproturon	mg/l	BLQ(LOQ 0.00001)	USEPAMethod8321B:2007	0.009	NoRelaxation
	Methyl Parathion	mg/l	BLQ(LOQ 0.00001)	USEPAMethod8321B:2007	0.0003	NoRelaxation
	Malathion	mg/l	BLQ(LOQ 0.00001)	USEPAMethod8321B:2007	0.190	NoRelaxation
31	Nickel	mg/l	BLQ(LOQ 0.0001)	USEPAMethod200.8:1994	0.02	NoRelaxation
32	Ammonia as NH ₃	mg/l	BLQ(LOQ 0.02)	IS 3025(Part-34):1982	0.5	NoRelaxation
33	Barium as Ba	mg/l	BLQ(LOQ 0.01)	USEPAMethod200.8:1994	0.7	NoRelaxation
34	Silver as Ag	mg/l	BLQ(LOQ 0.001)	USEPAMethod200.8:1994	0.1	NoRelaxation
35	Chloramines	mg/l	BLQ(LOQ 0.1)	IS 3025(Part-26):1986	4.0	NoRelaxation
36	Molybdenum	mg/l	BLQ(LOQ 0.01)	USEPAMethod200.8:1994	0.07	NoRelaxation
37	Polychlorinated Biphenyls	mg/l	BLQ(LOQ 0.00001)	USEPAMethod525.5:1995	0.0005	NoRelaxation



Authorized Signatory

Abhishek Markam

अभिषेक मरकम / ABHISHEK MARKAM

वरिष्ठ प्रबंधक पर्यावरण / Sr Manager EMG

तलाईपल्ली / Talaipalli

कोयला खनन परियोजना / Coal Mining Project

एनटीपीसी लिमिटेड / NTPC Limited

घरघोडा / Gharghoda

Sample Description No HECSL/WT/003/260423	
Sample Location	Chimtapani
Type of Sample	Surface Water
Date of Sampling	25/04/2023
Test Parameters	As per Scope of Work
Nature of Sampling	Spot

S.No.	Parameters	Units	Results	TestMethod	IS:10500:2012	
					Acceptable Limits	Permissible Limits
38	Trihalomethanes					
	Dibromochloromethane	mg/l	BLQ(LOQ 0.05)	APHA6232 23rdEdn: 2017	0.1	NoRelaxation
	Bromodichloromethane	mg/l	BLQ(LOQ 0.05)	APHA6232 23rdEdn: 2017	0.06	NoRelaxation
	Chloroform	mg/l	BLQ(LOQ 0.05)	APHA6232 23rdEdn: 2017	0.2	NoRelaxation
	Bromoform	mg/l	BLQ(LOQ 0.05)	APHA6232 23rdEdn: 2017	0.1	NoRelaxation
39	Cyanide	mg/l	BLQ(LOQ 0.05)	IS 3025(Part 27) Sec 1: 2021	0.05	NoRelaxation
40	Polynuclear Aromatic Hydrocarbons	mg/l	BLQ(LOQ 0.0001)	USEPA Method 525.2:1995	0.0001	NoRelaxation
41	Total Arsenic	mg/l	BLQ(LOQ 0.005)	USEPA Method 200.8:1994	0.01	NoRelaxation
42	Total Chromium	mg/l	BLQ(LOQ 0.01)	USEPA Method 200.8:1994	0.05	NoRelaxation

Note :- BLQ-Below the Limit of Quantification, LOQ-Limit of Quantification, NTU-Nephelometric Turbidity Unit, mg/l-Milligram per litre.



Authorized Signatory

Abhishek Markam
 अभिशेक मरकम / ABHISHEK MARKAM
 वरिष्ठ प्रबंधक पर्यावरण / Sr Manager EMG
 तलाईपल्ली / Talaiipalli
 कोयला खनन परियोजना / Coal Mining Project
 एनटीपीसी लिमिटेड / NTPC Limited
 घरगोडा / Gharghoda