

IN THE NATIONAL GREEN TRIBUNAL, EASTERN ZONE**KOLKATA****O.A. NO. OF 20204**

Sridhar Samal

... Petitioner

Versus

State of Odisha and others

... Opp.Party

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KOLKATA

Date: 8/2/24


Advocate for the Petitioner

SYNOPSIS

That the present application is filed challenging the action of respondents for gross violation of the provision of Section 2(b), 2(c), 22 and 22a of Air Prevention and Control of Pollution Act 1981, for deliberate violation of Doctrine of Public trust as defined by Hon'ble Supreme Court. The applicant in this application challenges the arbitrary and illegal action of respondents in dumping coal dust in Talcher city causing heavy pollution. The applicant also challenges pollution caused to the Talcher city by private trucks transporting coal without taking any preventive steps which badly pollutes air, water and farmlands. Such action not only creates ecological imbalance but also is opposite of sustainable development and also a clear violation of Article 21 of the Constitution.


Finding no other alternative the applicant knocks the door of this Hon'ble Tribunal to protect the Environment and thousands of people and protect the Talcher town from forceable disaster.

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8.2.2024
DEBENDRA PRASAD RAY
NOTARY, CUTTACK, ODISHA
REGN.No.ON-107/2009

DATE	LIST OF EVENTS
1 ST August 2020	Publication of Report namely <i>“Rapid Study on Emission Inventory and Source Apportionment for Angul and Talcher”</i>
1 ST August 2020	Publication of Report namely <i>“Air Pollution Emergency Plan”</i>
29/07/2021	Date of formation of members under National Clean Air Programme




DEBENDRA PRASAD RAY
 NOTARY, CUTTACK, ODISHA
 REGN.No.ON-107/2009

IN THE NATIONAL GREEN TRIBUNAL; EASTERN ZONE

KOLKATA BENCH

ORIGINAL APPLICATION No. _____ of 2024

In the Matter of:- An application Under Section 14, 15 and 18 of
the National Green Tribunal Act, 2010 read with
Rule 8 of the National Green Tribunal(Practice
and Procedure) Rules, 2011

In the Matter of:- Sridhar Samal aged 45 years S/o Krushna Samal

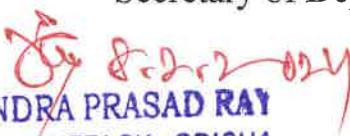
At- Kanasmunda P.O- Talcher Dist- Angul-

759117 *Email/ Tel - Not Avbl*

..... **Applicant**

Versus

1. Union of India represented through Secretary of
Ministry of Environment, Forest and Climate Change
At- Jorbagh Marg, Aliganj New Delhi-110003 email-
secy-moef@nic.in Tel-011-208193308
2. State of Odisha represented through Addl. Chief
Secretary of Department of Forest, Environment and

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DEBENDRA PRASAD RAY
NOTARY, CUTTACK, ODISHA
REGN.No.ON-107/2009

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6. Talcher Angul Meramendali Development Authority
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7. Talcher Municipality represented Through Executive
Officer At- Municipality Bazar Talcher Dist- Angul-

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e.o.talcher@gmail.com

8. National Highway Authority of India represented

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9. Regional Transport Officer, Talcher At- Near Talcher

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10. Mahanadi Coalfields Limited represented through

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..... **Opp. Parties/Respondents**

To

The Hon'ble Chairman and His Companion Members of the

Hon'ble National Green Tribunal, Eastern Zone, Kolkata

The humble petition of

Applicant above named



DEBENDRA PRASAD RAY
NOTARY, CUTTACK, ODISHA
REGN.No.ON-107/2009

Most Respectfully Shweth

1. The address of the applicant is given above for service of notices of this application.
2. The address of respondents is given above for the service of notice of application
3. The application is being filed under Sections 14, 15, 18, 19, and 20 of the National Green Tribunal Act, 2010, to challenge the significant issue of unwarranted dust pollution caused by coal residue accumulated along roadsides as well as pollution caused due to leakage of industrial dust effluents into nearby farmlands and water bodies. This pollution primarily stems from the unregulated transportation of coal via truck and trains, leading to adverse environmental impacts and suffocating the nearby areas with dust pollution.
4. That the present applicant is a local of the affected area and has been residing in same district where this pollution is happening. He and his family members have been suffering from the said pollution. And his land and his farmland has been indirectly affected by the said pollution.



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5. That it is worthwhile to mention here that Talcher is a town located in the Angul district of the state of Odisha in eastern India and Located on the right bank of the Brahmani River. As per Census of 2011 it has population of nearly 41,000. It is well Known for its coal reserves, Talcher houses some of the largest coalfields in India, contributing significantly to the country's coal production. The region houses several thermal power plants that utilize coal from the Talcher coalfields to generate electricity, contributing significantly to India's power generation capacity.
6. That it is worthwhile to mention here that Mahanadi Coalfields Limited (MCL) which is a public sector company stands as a significant coal producer in India and ranks among the crucial subsidiaries of Coal India Limited, holding a pivotal role in the nation's coal sector. Established in 1992 after being separated from South Eastern Coalfields Limited, its headquarters reside in Sambalpur. MCL operates a network of coal mines spanning Odisha, encompassing seven open-


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cast mines and three underground mines in its operational domain.

According to Geological Survey of India, the Talcher Coalfield under MCL has reserves of 38.65 billion tonnes, the highest in India. On daily basis these coals are transported through trucks and trains to places like Andhra Pradesh, Maharashtra, West Bengal, Tamil Nadu etc. and internationally to nations like China, Japan etc. Because of these coal mines and other mining industries Talcher has become one the most important economic hub of India.

7. That it is worthwhile to mention here that on daily basis around 5000-10000 coal laded trucks ply from the coal mines to different places of India. The passage of these trucks mostly happens within the city and then it touches NH-149 which also passes within the city.

That most of these trucks don't take any preventive or precautionary measures so that coal dust from the trucks leaks outside and pollutes the nearby vicinity.



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8. That it is worthwhile to mention here trucks transporting coal mostly from Mahanadi Coalfields Limited transport coal without taking any proper precautionary measures because of which Talcher town has become one of the most polluted cities of the State.
9. That it is worthwhile to mention here that because of leakage of coal dust from the trucks large amount of coal dust lies on both sides of roads which becomes the major cause of pollution of the said area. The dust pollution is so high that visibility becomes very difficult in most of the times. Even most of the households and other structures turns black with coal dust. True copy of photograph of coal dust has been annexed here as **Annexure 1**
10. That it is worthwhile to mention here that places like Balhar, Lingaraj, Nandira, Conver belt area near Balanda, Thermal area, Tentulei Village, Bada Danda Sahi, Baghamara and Diajharan are the most affected villages because of air pollution. Even the NH-149 road that passes near the city is also badly affected by air pollution.

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11. That it is worthwhile to mention here that many schools, hospitals, residential and commercial complexes fall within the said route. Because of such high amount of dust pollution most of the people residing in the said area have started developing air borne disease and pulmonary diseases. The condition is deteriorating

12. That it is worthwhile to mention here that it is not only the dust pollution which is causing havoc amongst the people of the said area the leakage of coal dusts as well as fly ash has also damaged most of farmlands and water bodies that passes through the city. Tentulei Village, Bada Danda Sahi, Baghamara and Diajharan are the worst affected villages which has been badly affected due to leakage of fly ash and coal dust from nearby coal mining. True copy of photograph of leakage of industrial effluents has been annexed here as

Annexure 2

13. That it is worthwhile to mention here that a scientific report by State Pollution Control Board, Odisha which reads as

“ Rapid Study on Emission Inventory and Source



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Apportionment for Angul and Talcher” has categorized that pollution of Talcher exceed the NAAQ level.

True copy of report namely *Rapid Study on Emission Inventory and Source Apportionment for Angul and Talcher* has been annexed here as **Annexure 3**

- 14.** That it is worthwhile to mention here that both Municipality and Mahanadi Coal Fields Limited do sometimes take steps to reduce dust pollution by sprinkling water etc. But these measures are insufficient and has practically not brought any changes on the ground. Even the sprinkling of water happens very rarely. These insufficient measures haven't changed the scenario on the ground and the present pollution is still very high.

Even it is also seen that most of the trucks carrying coal or other minerals through the city don't use any sorts of protection measures like covering the minerals with plastic sheets etc., because of which most of the dust gets easily accumulated in the air.

15. That it is worthwhile as per National Clean Air

Programme(NCAP) an air quality management cell has been formed in the year 29/07/2021 by the Talcher Municipality with an aim to reduce and keep check in the pollution in Talcher city. But in practical sense this team is not functioning in proper sense. True copy of members of NCAP Talcher has been annexed here as **Annexure 4.**

16. That it is worthwhile to mention here that taking into

consideration of dire pollution condition of Talcher city the State Pollution Control Board, Odisha has prepared an Air Pollution Emergency Response Plan with an aim to take immediate preventive steps to reduce pollution when condition becomes dire and uncontrollable. True copy of Air Pollution Emergency Plan has been annexed here as **Annexure 5.**

17. That it is worthwhile to mention here that despite all such

proposals nothing has been done in practical sense to reduce pollution. The condition of air in the said area is extremely




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critical even the nearby waterbodies and farm lands has also been suffering because of pollution.

18. Those in their colorable exercise of the power and position the respondent are remaining silent which will take toll on ecosystem and cause irreparable loss to the environment as well as local people of Talcher city and shall negatively affect the life of people dependent on the natural resources of the said area.

19. That the above action of respondent raises substantial question relating to environment as there is direct violation of specific statutory environmental obligation, the community at large other than individual or group of individuals are highly affected by environmental consequences, the gravity of damage to the environment and property is highly substantial, the damage to public health is broadly miserable, the environmental consequences relate to specific activity and point source of pollution as has been enumerated in Section 2(m) of National Green Tribunal Act, 2010.



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20. Being aggrieved by the above action of respondent the applicant being a public-spirited person and an environmental activist craves to invoke the jurisdiction of this Hon'ble Tribunal by way of filing this Original Application on following grounds

GROUND

- I. For the instant application being filed u/s 14 of National Green Tribunal Act and Air (Prevention and Control of Pollution) Act,1981 under the Act raising the substantial question wherein the community at large and the environment is grossly affected and is coming within the bit of Section 2(m) of the Act. Section 2(m) of the Act provides that substantial question relating to environment. The arbitrary action of the respondents is an antithesis to the doctrine of public trust as upheld and laid down by the Hon'ble Supreme Court in a plethora of judgements.
- II. For that the environment as defined U/s 2(a) of Environment Protection Act, 1986 provides

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“environment” includes water, air and land and the inter-relationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organism and property”;

The term environment as defined above inherently includes climate within its scope. Hence the present original application which is being preferred because of the adverse impact of the impugned action of the respondent comes within the ambit and jurisdiction of Hon’ble Tribunal

III. For that the action of the respondent is violative of provision of Article 19(1)(g) of the Constitution of India which states that *“g) To practice any profession, or to carry on any occupation, trade or business”*

It is worthwhile to mention here that the water was used for purposes of irrigation like farming oil seeds and nuts but due to unchecked encroachment and excessive pollution the river bed had become dry and had become dumping yard. The above nuisance are being cause creating environmental



disorder in gross violation of Section 2(a)(b) and section 22 and 22A of Air Act 1981. It not only affects the human health but also affects substantially to the eco environment system.

IV. “Doctrine of Public Trust”- There is an ancient Roman theory called as doctrine of Public trust. It states that certain common properties such as air, water and forests are immense importance to the people in general and they must be held by the government as a trustee for the free and unimpeded use by general public and it would be wholly unjustified to make them subject to private ownership. The doctrine enjoins upon the government to protect the resources for enjoyment of the general public rather than permit their use for private ownership or commercial exploitation. The Hon’ble Supreme Court recognized this principle in **MC Mehta vs Kamal Nath (1997) 1 SCC 388**

V. That due to dumping of waste the hydro morphological state of the river as well as the aquatic life of the river is getting affected. This would ultimately result in affecting the flow

Adv,

dynamics of the river, i.e. the amount of water flowing per unit volume. A change in the flow dynamics of a river can result in decrease in the water level of canal, ultimately creating draught like situation which would badly affect the livelihood of people.

- VI. For that s to whether the action is sustainable in the eye of law being violate of Article 21 of the Constitution of India or not. In the view of above fact that in any organized society right to live does not limit to animal needs of men. It is secured when he is assured of all facilities to develop him and is freed from restriction which inhibits his growth.
- VII. For that all human rights are designed to achieve this subject. Right to live guarantee in any civilized society implies the right to food, water, decent environment, education, medical care and shelter.
- VIII. For that air and water are the most precious gift of the nature are not only essential to human but also to flora and fauna. For that in order to protect the environment and the ecology of man a special strategy has been developed Stockholm

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conference on Human Environment. Since then Indian government has also taken several legislative and executive measure in addition to constitutional amendment to protect and preserve environment. The judiciary has also played vital role in protecting environment through its dynamic interpretation of Article 21, 48A and 51A of the Indian Constitution.

- IX. For that the country accounts for 2.45 per cent of total land area and 4 per cent of the water resources of the world. Nevertheless, water is a scarce natural resource with demands on it increasing on event of growing population of over one billion. Since water is a scarce resource, its sharing, distribution requires a regulatory framework, which is brought about through not only laws written but also traditional and customary practices. In terms of statutory development, irrigation laws constitute the most developed part of water law. These include laws on embankments, drinking water supply, irrigation, floods, water conservation,

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river water pollution, rehabilitation of evacuees and displaced persons, fisheries and ferries.

- X. The Judiciary has propounded that the right to life and hence the scope of Article 21, Article 48 and Article 51(g) can include the right to clean water. In case of Narmada **Bachao Andolan vs Union of India 10 SCC 664** the Hon'ble Supreme court held that the right to clean water is fundamental right under Article 21 of the Constitution. The court observed that right to clean water and Air is a part of the basic necessity of the human's right to life. The state is bound to prevent water getting polluted.
- XI. For the right to Air falls as an inherent right vested in persons who either acquire that right by ownership of property or in current scenario more appropriately are more vested with an interest in it by means of stat being its trustee. The air that is widely available everywhere is owned by every individual. The state must therefore ensure that the public is able to exercise their right that means that the public has access to water and availability to water. In **Subash Kumar vs State**

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of Bihar AIR 1991, 420 SC THE Supreme Court held that “the right to live includes the right of enjoyment of life. If anything endangers or impairs that quality of life in derogation of laws, a citizen has right to recourse to Article 32 of the constitution for removing the pollution of water or air which may be detrimental to the quality of life”. By this judgement and many others the court placed a duty on the state to ensure the rights of citizen are protected


XII. Further in **MC Mehta vs Kamalnath (1 SCC 388 (1997)** the Supreme Court ruled that the State is not only bound to regulate water supply but should also help to realize the right to healthy water and prevents hazards. The court also discussed how the principle of Roman law “*Salus Populi est Suprema Lex*” (Welfare of people is paramount law) is the abiding faith of the Indian Constitution. Thereby the court assigned the state with a positive role to help people realize their right and needs

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LIMITATION

That there is continuing cause of action due to on-going uncontrolled pollution of coal dust in the said area hence the present application is not barred by limitation.

Dr.


DEBENDRA PRASAD RAY
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REGN.No.ON-107/2009

PRAYER

It is therefore prayed that this Hon'ble Tribunal may graciously please to:

- I. Direction may be given to Opp. Parties to take steps to regularly clean the affected areas and take steps to reduce the accumulation of dust in the affected areas.
- II. Direction may be given to Opp. Parties to sprinkle water in the affected areas to reduce spreading of coal dust in the air.
- III. Direction may be given to Opp. Parties to take regular plantation programme in the affected areas as mentioned above.
- IV. Direction may be given to Opp. Parties to keep check on the trucks or other vehicles transporting coals or other minerals so that they transport those minerals properly by covering it properly. And if any trucks are found violating it heavy penalty may be imposed against those vehicles. Even direction may be given to install GPS in every trucks, so that there movement can be tracked.



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- V. Direction may be given to Opp. Parties to properly function committee formed under National Clean Air Programme (NCAP) who at regular interval shall report the Hon'ble Tribunal about what steps has been taken to reduce the pollution of Talcher City
- VI. Or any other order(s), direction(s) may be passed as deemed fit and proper


And for this act of kindness the applicant shall in duty bound shall ever pray.

Kolkata

By the applicant

Date ✓ 8/2/24

Advocate


DEBENDRA PRASAD RAY
NOTARY, CUTTACK, ODISHA
REGN.No.ON-107/2009

**BEFORE THE NATIONAL GREEN TRIBUNAL
EASTERN ZONE BENCH, KOLKATA**

ORIGINAL APPLICATION No. _____ of 2024

Sridhar SamalApplicant

Versus

State of Odisha and othersRespondents

VERIFICATION

I Sridhar Samal aged 45 years S/o Krushna Samal At- Kanasmunda P.O- Talcher Dist- Angul-759117 do hereby verify and state that the contents of the original application and the facts stated are true to best of my belief. And no material facts which are available to me are being suppressed by me in any manner whatsoever.

Identified by


Advocate



Verificant


DEBENDRA PRASAD RAY
NOTARY, CUTTACK, ODISHA
REGN.No.ON-107/2009

**BEFORE THE NATIONAL GREEN TRIBUNAL
EASTERN ZONE BENCH, KOLKATA**

ORIGINAL APPLICATION No. _____ of 2024



Sridhar SamalApplicant

Versus

State of Odisha and othersRespondents

AFFIDAVIT

I Sridhar Samal aged 45 years S/o Krushna Samal At- Kanasmunda
P.O- Talcher Dist- Angul-759117 hereby solemnly affirm and state as
follows that,

1. That I am the applicant in this case
2. That the facts stated are true to the best of my knowledge and
no materials facts which are available to me are being
supressed by me in any manner whatsoever.



Identified By

[Handwritten signature]

Advocate

[Handwritten signature: Sridhar Samal]

Deponent

Certified that the above named Deponent(s)
being Identified by.....*[Handwritten signature]*.....
Advocate solemnly affirms and states before
me that the contents of this affidavit are all
true to the best of their/his/her knowledge

[Handwritten signature] 8.2.2024
DEBENDRA PRABAD RAY
NOTARY, CUTTACK

ANNEXURE -1

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ATTESTED

27 ANNEXURE -2



TRUE COPY
[Signature]
ATTESTED

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ANNEXURE -3

**Rapid Study on Emission Inventory
and Source Apportionment
for
Angul and Talcher**



TRUE COPY
Spn
ATTESTED

**STATE POLLUTION CONTROL BOARD, ODISHA
BHUBANESWAR**

GUIDANCE

29

Dr. K Murugesan, IFS, Member Secretary
Shri Debidutta Biswal, IFS, Ex-Member Secretary

CONTRIBUTION

Dr. Nihar R Sahoo, Chief Environmental Engineer
Er. Simanchala Dash, Senior Environmental Engineer
Dr. Anup K Mallick, Regional Officer, Angul
Er. Subhadarsini Das, Environmental Engineer

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State Pollution Control Board, Odisha
Bhubaneswar
August 2020

LIST OF ABBREVIATION

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AQ	:	Air Quality
BEL	:	Bhushan Energy Ltd.
BSL	:	Bhushan Steel Ltd.
CPA	:	Critically Polluted Area
CPCB	:	Central Pollution Control Board
CPP	:	Captive Power Plant
GLC	:	Ground Level Concentration
GMR	:	GMR Energy Ltd.
JITPL	:	Jindal India Thermal (P) Ltd.
JSPL	:	Jindal Steel and Power Ltd.
MGM	:	MGM Steel Ltd.
NAAQS	:	National Ambient Air Quality Standard
NALCO	:	National Aluminium Company
NAV	:	Nava Bharat Ventures Ltd.
NGT	:	National Green Tribunal
OB	:	Over Burden
OCF	:	Open Cast Project
PM	:	Particulate Matter
SPCB	:	State Pollution Control Board
TSTPS	:	Talcher Super Thermal Power Station
TTPS	:	Talcher Thermal Power Station

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2023

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Appendix - I

Appendix - II

Dr. P. K. Singh
2017

Emission Inventory and Air Quality Modelling of Talcher-Angul Area

Talcher-Angul area, spreading over Angul and Dhenkanal district is an industrial and mining area in the State of Odisha. This area, having coal mines, thermal power stations, steel and aluminum plants and many other industries witnesses high level of air pollution, particularly with respect to PM_{10} and $PM_{2.5}$. In a recent report prepared by the Central Pollution Control Board (CPCB) Angul and Talcher have found place in the 102 non-attainment cities of the country. The CPCB report analyses the air quality for the past five years, and indicates that PM_{10} and $PM_{2.5}$ in the ambient air of Angul and Talcher remain above the National Ambient Air Quality Standard (NAAQS). Hon'ble National Green Tribunal (NGT) in its order dated the 15th November 2019, in the matter of OA No.681/2018 directed the State Pollution Control Board (SPCB) to prepare a Source Apportionment Study (SAS) within three months, taking into consideration the past air quality and other data.

Considering the urgency for an abatement plan, the SPCB prepared city-based Action Plan for abatement of air pollution, which includes Talcher and Angul. The Action Plan was prepared by the Center for Science and Environment in consultation with the F&E Department of Government of Odisha and the SPCB. The Report was reviewed by the CPCB and it observed that for further refinement of the action plan it is necessary to carry out an emission inventory and source apportionment study. Source apportionment study is a time-consuming and expensive study. Therefore, in order to meet the timeline stipulated by the Hon'ble NGT, the current study is carried out on the basis of existing data for Angul and Talcher.

To prepare an air quality management plan for Angul – Talcher, emission inventory and air quality modelling are essential. Emission inventory in Angul and Talcher is done for all the major sources of particulate matter, such as Point Sources, Area Sources and Mobile Sources. In preparing air quality management plan emission inventory data of this area is used in the air dispersion model, AERMOD view.

2. Description of Study area

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Angul and Talcher are the two non-attainment cities in the district of Angul, where the air quality does not conform to NAAQS. These two cities are located at a distance of about 15 km from each other. Talcher municipality spreads over an area of 25.5 km² and has a population of about 40,841 (2011 census). The population density of Talcher is 1604 per km². Similarly, Angul municipality spreads over an area of 22 km² and has a population of 44,000 (2011 Census) with a population density of 2017 per km².

The relative location of Talcher and Angul is shown in the Maps as **Figure 1**. The boundary depicted through the dotted line indicates the boundary of the study area.

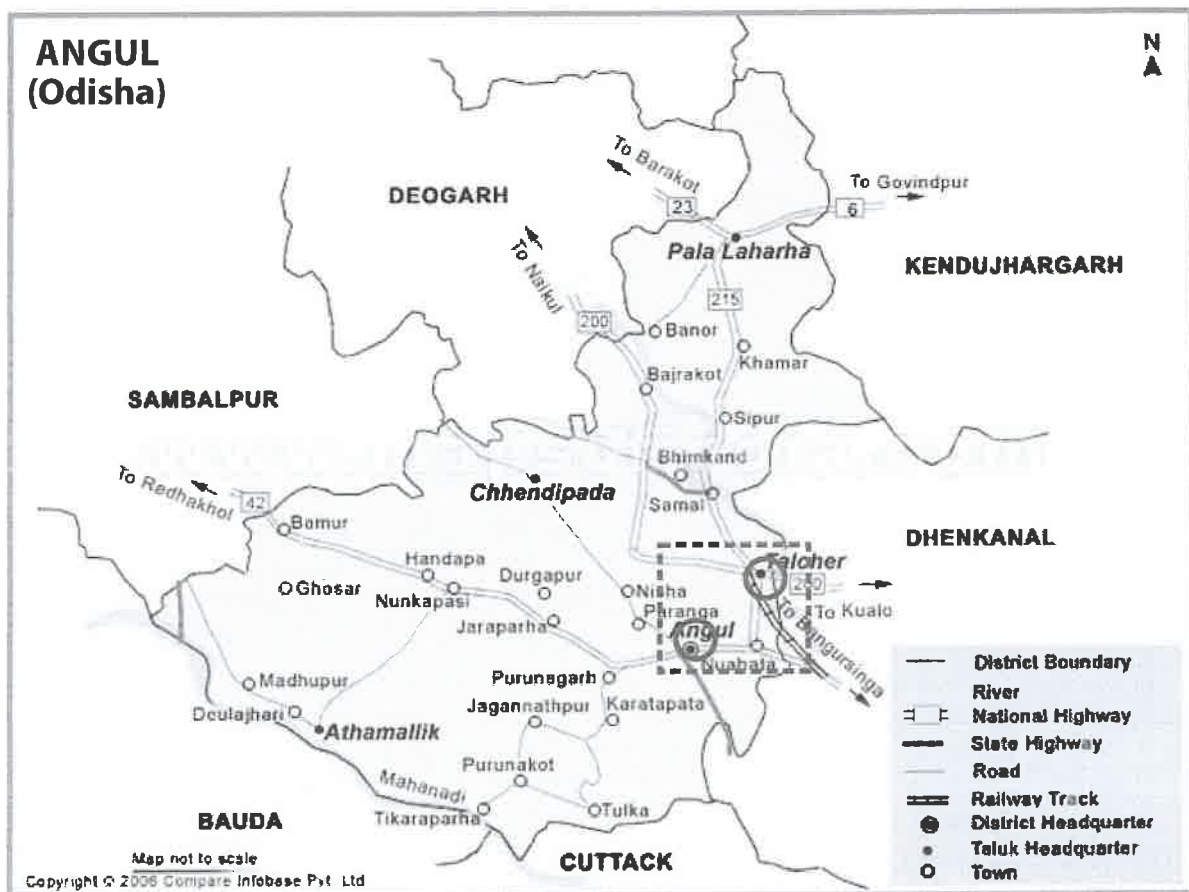


Fig 1: Angul and Talcher study area

In between Talcher and Angul there are large industries, thermal power plants and coal mines. Besides the urban activities of both the cities, the air quality of this region is greatly influenced by these industries and mines. Therefore, for the air quality assessment, a 50 km × 50 km area is chosen so that both the municipalities Angul and Talcher are included in the study area and the

industries and mines that is expected to contribute to air pollution in this area are also included. The study area of 2500 km² and the relative locations of the two cities are also shown in the map at **Figure 1**.

3. Air quality in Angul-Talcher

In order to assess the air quality of this region, the State Pollution Control Board (SPCB) has established four ambient air quality monitoring stations, two each at Talcher and Angul. The sampling is usually done twice a week on a 24-hour basis. In each station, there are provisions for monitoring the gaseous pollutants, such as SO₂ and NO_x, and particulates-PM₁₀ and PM_{2.5}.

For the purpose of this study, the monthly mean value of each parameter was determined for each station, and the average value of all the monitoring stations are reported as the air quality of the respective cities. Following this method, the air quality of Angul and Talcher was assessed with respect to SO₂, NO_x, PM₁₀ and PM_{2.5}, over a 15-month period, starting from January 2018 till March 2019. Month-wise concentration of pollutants *vis-à-vis* the NAAQS, for both the cities, are shown through **Figure 2** to **Figure 5**.

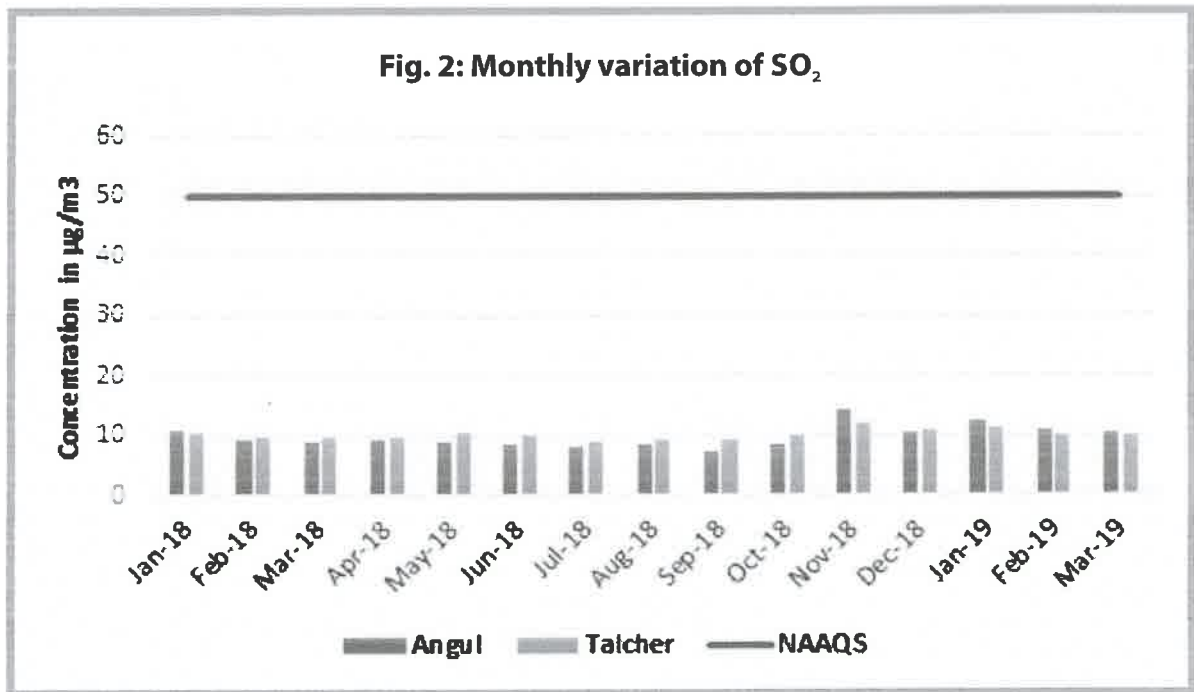


Fig. 2: Monthly variation of SO₂ in Angul and Talcher

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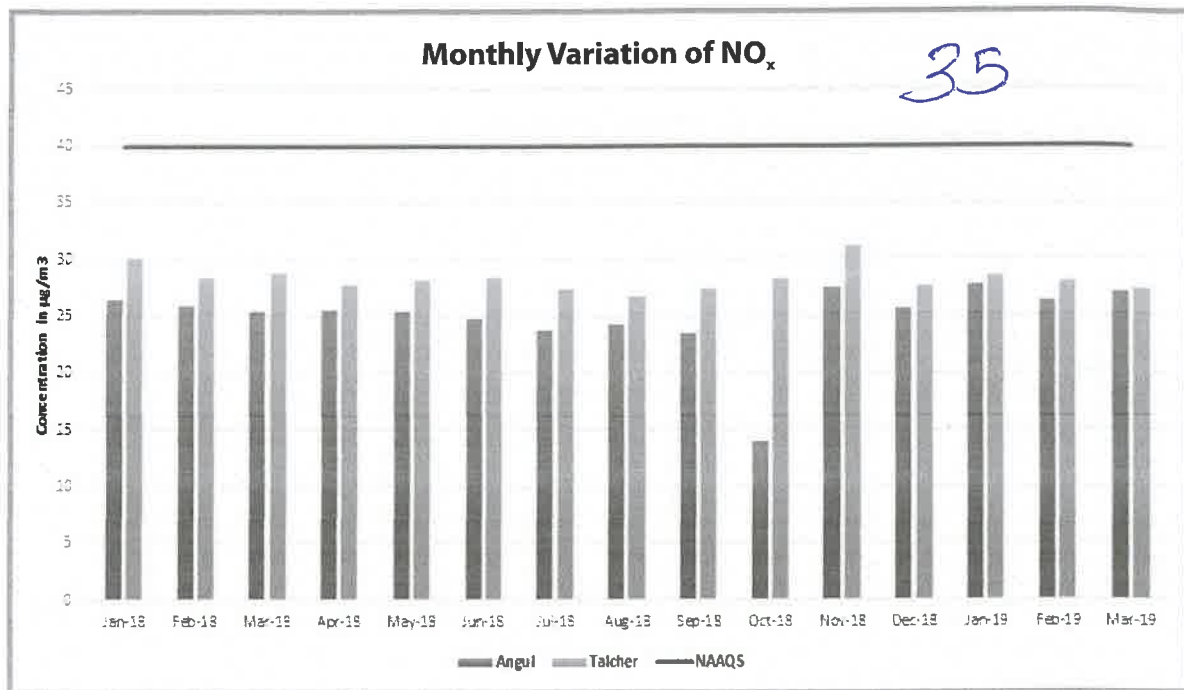


Fig. 3: Monthly variation of NO_x in Angul and Talcher

The air quality monitoring results indicate that the annual average of SO₂ concentration in 2018 in Angul and Talcher was 9.36 µg/m³ and 9.97 µg/m³ respectively, against the NAAQS of 50 µg/m³. Similarly, the NO_x concentration in Angul and Talcher were observed to be 24.32 µg/m³ and 28.34 µg/m³ respectively, against the NAAQS of 40 µg/m³ for NO_x.

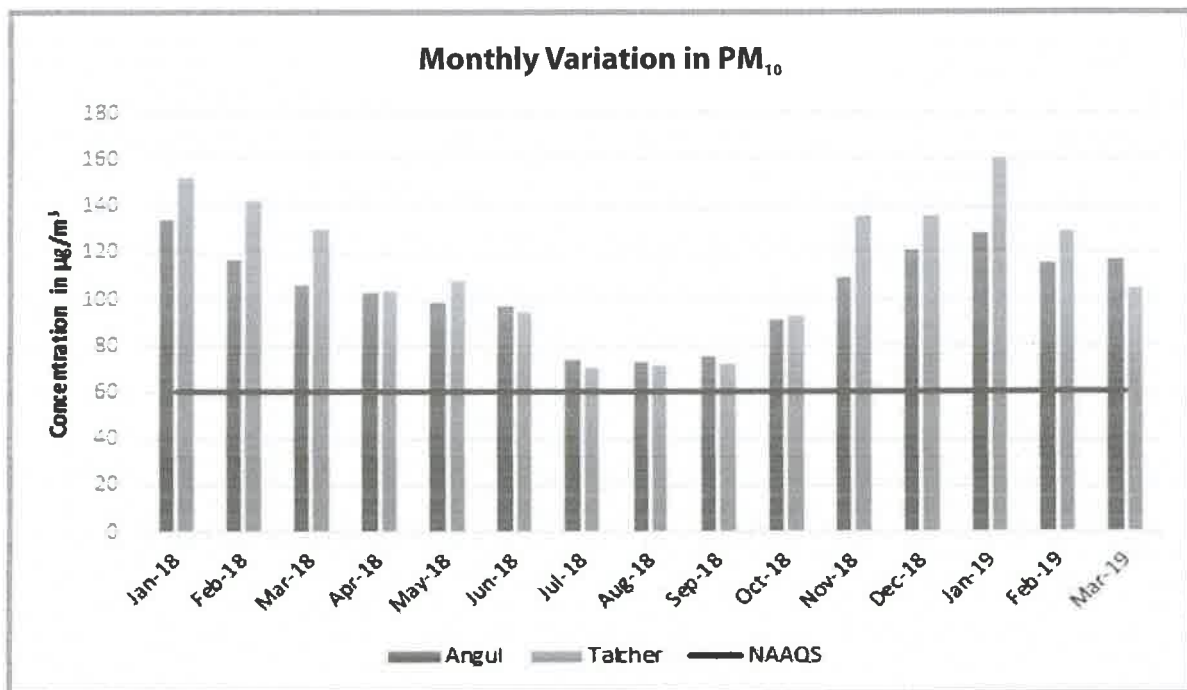


Fig. 4: Monthly variation of PM₁₀ in Angul and Talcher

The results indicate that the level of SO_2 , both in Angul and Talcher remain within 20% of the NAAQS. At the same time, the level of NO_x remains within 60% - 70% of the NAAQS. It is further observed that the concentration of SO_2 and NO_x in Talcher is slightly higher than that of Angul.

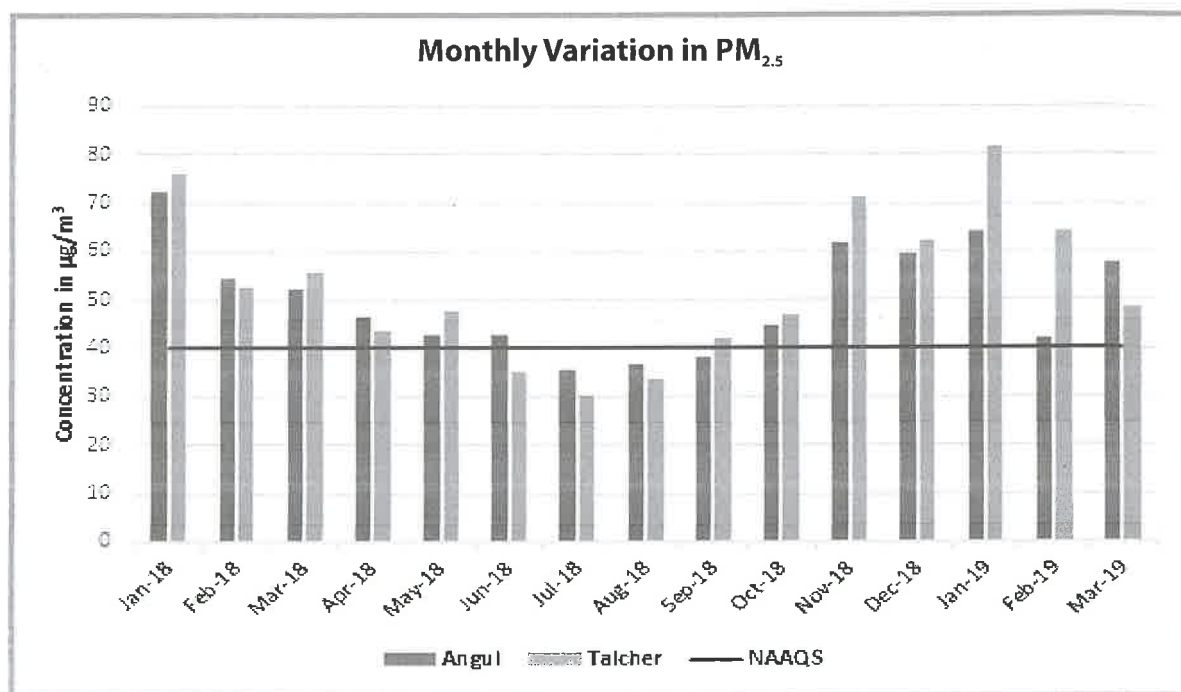


Fig. 5: Monthly variation of PM_{2.5} in Angul and Talcher

Unlike gaseous pollutants, the level of PM_{10} and $\text{PM}_{2.5}$ are observed to be higher than the NAAQS. The air quality monitoring results indicate that the annual average of PM_{10} concentration in 2018 in Angul and Talcher was $100.17 \mu\text{g}/\text{m}^3$ and $109.29 \mu\text{g}/\text{m}^3$ respectively, against the NAAQS of $60 \mu\text{g}/\text{m}^3$. Similarly, the $\text{PM}_{2.5}$ concentration in Angul and Talcher were observed to be $48.83 \mu\text{g}/\text{m}^3$ and $49.63 \mu\text{g}/\text{m}^3$ respectively, against the NAAQS of $40 \mu\text{g}/\text{m}^3$ for $\text{PM}_{2.5}$. From the analysis of monthly concentration, it is observed that the PM_{10} remains above the Standard in all the months in a year, both in Angul and Talcher. On the other hand, $\text{PM}_{2.5}$ concentration in Angul came down below the standard during monsoon months July, August and September. Similarly, in Talcher, the $\text{PM}_{2.5}$ concentration came down below the Standard during June, July and August.

4. Study Methodology

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Taking into consideration the limited sources and requirement of Hon'ble NGT's timeline of three months, the study proposes to carry out the source apportionment study by analyzing air quality dispersion model. In this limited study the predicted value of the dispersion model is compared with the observed value of monitoring carried out by the State Pollution Control Board, Odisha. The flow-diagram depicting the study methodology is presented as **Figure 6**.

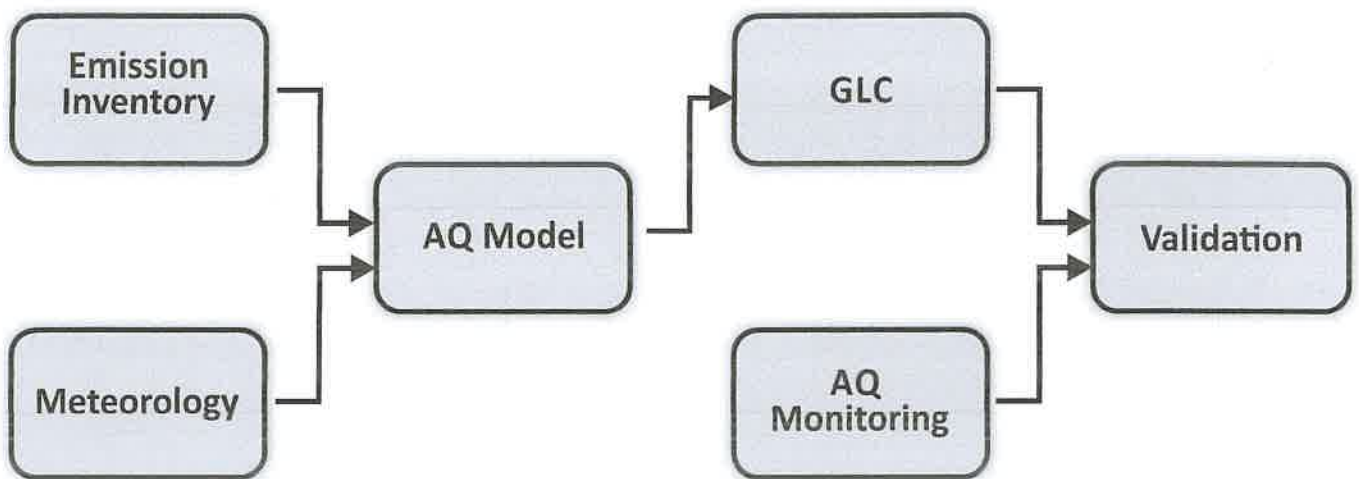


Fig. 6: Study methodology

Rigorous validation techniques which require multiple run of the model, chemical analysis of dust and chemical mass balance were not done, since the estimation is done purely on the basis of past monitoring data. A more rigorous validation is part of an elaborate source Apportionment Study being carried out by expert agencies. However, this limited study is expected to give a fair idea of contribution being made by different sources. For the present study, the sources have been broadly classified as:

- i) Industries
- ii) Mines
- iii) Transportation

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5. Emission Inventory

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Emission inventories are used to help determine significant sources of air pollutants and to target regulatory actions, thus is an essential input to air dispersion and mathematical models that estimate air quality. The effect of potential regulatory actions on air quality can be predicted by applying estimated emissions reductions to emissions inventory data in air quality models. In order to prepare the emission inventory, the emission sources are divided into three categories, such as *Point Sources, Area Sources and Mobile Sources*.

The results of air quality in Angul-Talcher area show that the concentration of PM_{10} and $PM_{2.5}$ is consistently higher than the NAAQS. Therefore, in this report all the major activities that contribute to PM_{10} and $PM_{2.5}$ are listed under the following broad categories:

- 1. Emissions from stacks of industries (Point Source)**
- 2. Emissions from mining activities (Area Source)**
- 3. Emissions from traffic movement (Line Source)**

5.1 Point source

A point source is a stationary facility or process that emits a significant amount of air pollutants during manufacturing, power generation, heating, incineration, or other such industrial activities. In Angul – Talcher all the stacks were identified and were physically surveyed to determine the site coordinates, height of the emission point and the operational characteristics of the emissions such as, gas flow, outflow speed, gas temperature. In Angul – Talcher 153 stacks were identified in different manufacturing units. Since dispersion behavior of stack gas greatly depends upon the height at which the emission takes place and the mean mixing height of the study area usually remains between 100 and 200 m, the stacks were classified into three categories depending upon their height.

- i. Small stacks of 100 m height or less,
- ii. Medium stacks of height 100 – 200 m, and
- iii. Tall stacks with height of more than 200 m.

Unit-wise number of stacks in each category are depicted in **Figure 7**.

Each stack is characterized by its emission rate in Nm^3/h (Q_i) and emission concentration in mg/Nm^3 (C_i)

From these two factors the Particulate Matter Emission Rate for each stack is calculated using the following formula.

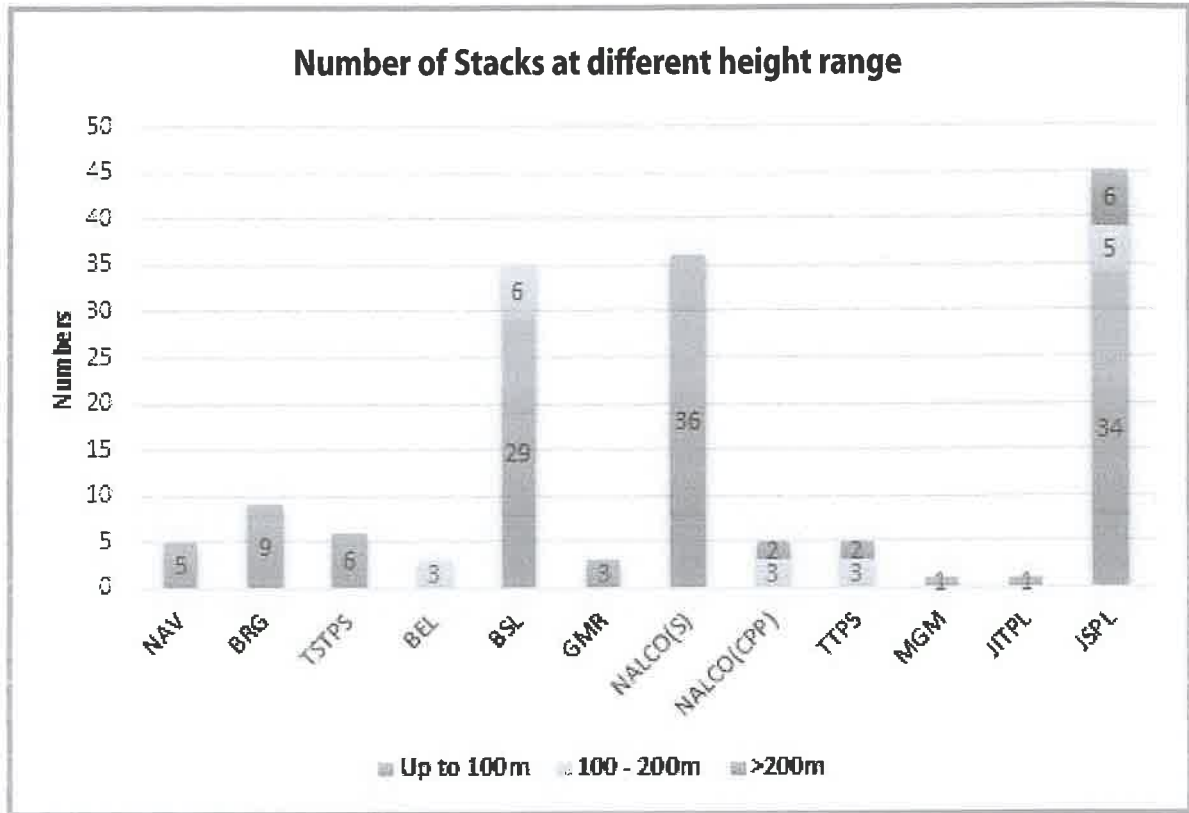


Fig. 7: Number of stacks at different height range in the study area

$$E_T^{PM10} = \sum_{i=1}^N \frac{Q_i \times C_i}{3.6 \times 10^6} \dots\dots\dots (1)$$

Where

Q_i = Volumetric emission rate from stack I (Nm^3/h)

C_i = Emission concentration from stack I (mg/Nm^3)

N = Total number of stacks in the study area

E_T^{PM10} = Total PM_{10} emission rate from stacks in the study area (g/s)

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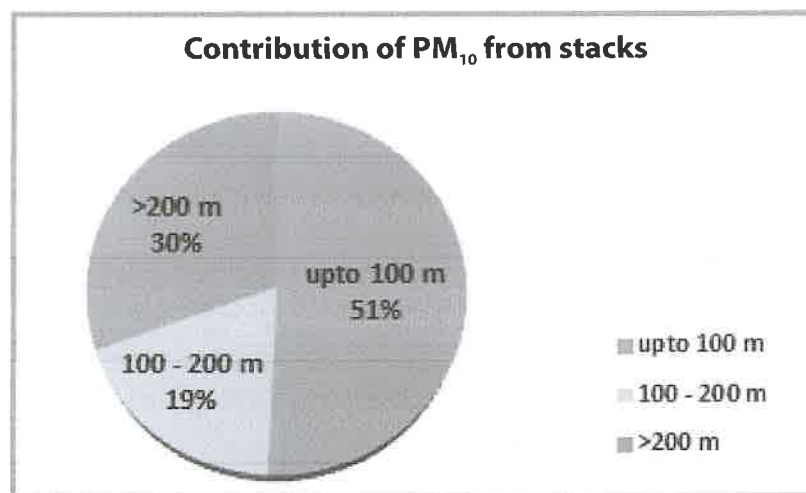
Table 1: Industry-wise emission of PM₁₀ 40

Sl. No.	Name of Industry	PM ₁₀ emission from stacks (g/s)			Total
		Up to 100 m	100- 200 m	>200 m	
1	Nav Bharat Ventures (NAV)	15.25			15.25
2	BRG Steels (P) Ltd (BRG)	13.11			13.11
3	Talcher Super Thermal Power Station (TSTPS)			333.33	333.33
4	Bhushan Energy Ltd (BEL)		51.53		51.53
5	Tata Steel BSL (BSL)	265.77	24.61		290.38
6	GMR Energy Ltd (GMR)			99.03	99.03
7	NALCO Smelter (NALCO - S)	257.62			257.62
8	NALCO CPP		163.75	30.46	194.21
9	Talcher Thermal Power Station (TTPS)	32.43	33.48		65.91
10	MGM Steel Ltd (MGM)		3.82		3.82
11	Jindal India Thermal (P) Ltd (JITPL)			30.93	30.93
12	Jindal Steel and Power Ltd (JSPL)	329.45	62.65	56.96	449.06
Total		913.63	339.84	550.71	1804.18

The total emission rate was estimated by applying Equation 1, and the estimation was made with the following assumptions:

1. The stacks installed by the industries and power plants are generally used for emitting flue gas and the particle matters are emitted as the combustion products. Therefore, it is assumed that all the particles are of 10µ dia or less.

2. The concentration of PM₁₀ in the stack gas are assumed to be approximate the standards prescribed by the SPCB.



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Fig. 8: Contribution of industrial emission at different heights

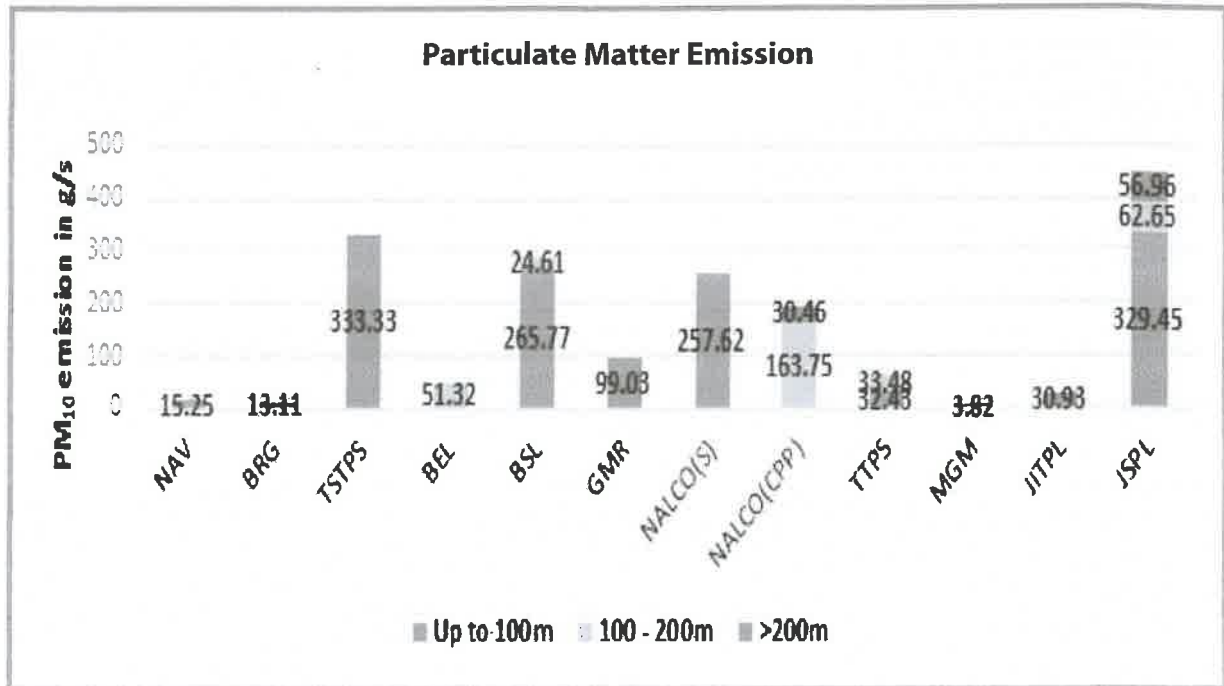


Fig. 9: Inventory of industrial emission at different heights

There are 153 number of stacks which emit PM_{10} into the atmosphere. It is estimated that 6500 kg of PM_{10} is emitted from the industrial sources per hour (**Table 1**). Out of them 3300 kg. (51%) is emitted at a height of less than 100 m, 1220 kg. (19%) is emitted between a height of 100-200 m and 1980 kg. (30%) is emitted above a height of 200 m (**Figure 8 and 9**).

5.2 Area Source

Area sources are small sources of air pollution which by themselves may not emit very much but, when their emissions are added together, account for a significant portion of the total emissions of air pollutants. In Angul – Talcher, seven open cast mines are operating which are the major area sources of air pollution. For estimating emission from these mines satellite images of the area were used to locate the mining area and seven patches were identified and shown in **Figure 10**.

The mines being located in close proximity, were divided on the active mining areas. Each of these areas were named as A1 to A7. The locations and areas of each patch are summarized in **Table 2**.

In coal mines all the major activities responsible for generation of PM_{10} and $PM_{2.5}$ are involved in

Over Burden (OB) removal and Coal Handling. The major activities occur in Over Burden removal are,

- i. Bulldozing in OB loading area
- ii. OB Loading
- iii. Transportation of OB by Trucks
- iv. OB Unloading
- v. Bulldozing in OB unloading area

The major activities occur during coal handling are

- i. Bulldozing in the coal loading area
- ii. Coal Loading
- iii. Transportation of Coal by Trucks
- iv. Coal Unloading
- v. Stocking with Bulldozer in unloading area
- vi. Coal loading in train

The formulas used for particulate matter emission rate calculation under each activity in OB handling and Coal Handling are explained in **Appendix – I**. The calculated Emission Rate (g/s-m²) for area source is presented in **Table 2** and **Figure 11**.

Table 2: Mine-wise PM₁₀ emission rate estimation

Sl. No.	Area	Name of mine	Area (km ²)	Fraction of Total Area (%)	EF (g/s-m ²)	Emission in kg/s
1	A1	Hingula OCP	3.79	8.49	9.561	36.23
2	A2	Balaram OCP	5.55	12.44	13.996	77.68
3	A3	Jaganath Colliery	6.08	13.62	15.323	93.16
4	A4	Ananta OCP and Jagannath	13.51	30.27	34.071	460.30
5	A5	Ananta OCP	4.41	9.89	11.127	49.07
6	A6	Bhubaneswari OCP, Ananta OCP	2.38	5.32	5.992	14.26
7	A7	Lingaraj OCP	8.91	19.97	22.476	200.26
			44.63	100		930.96

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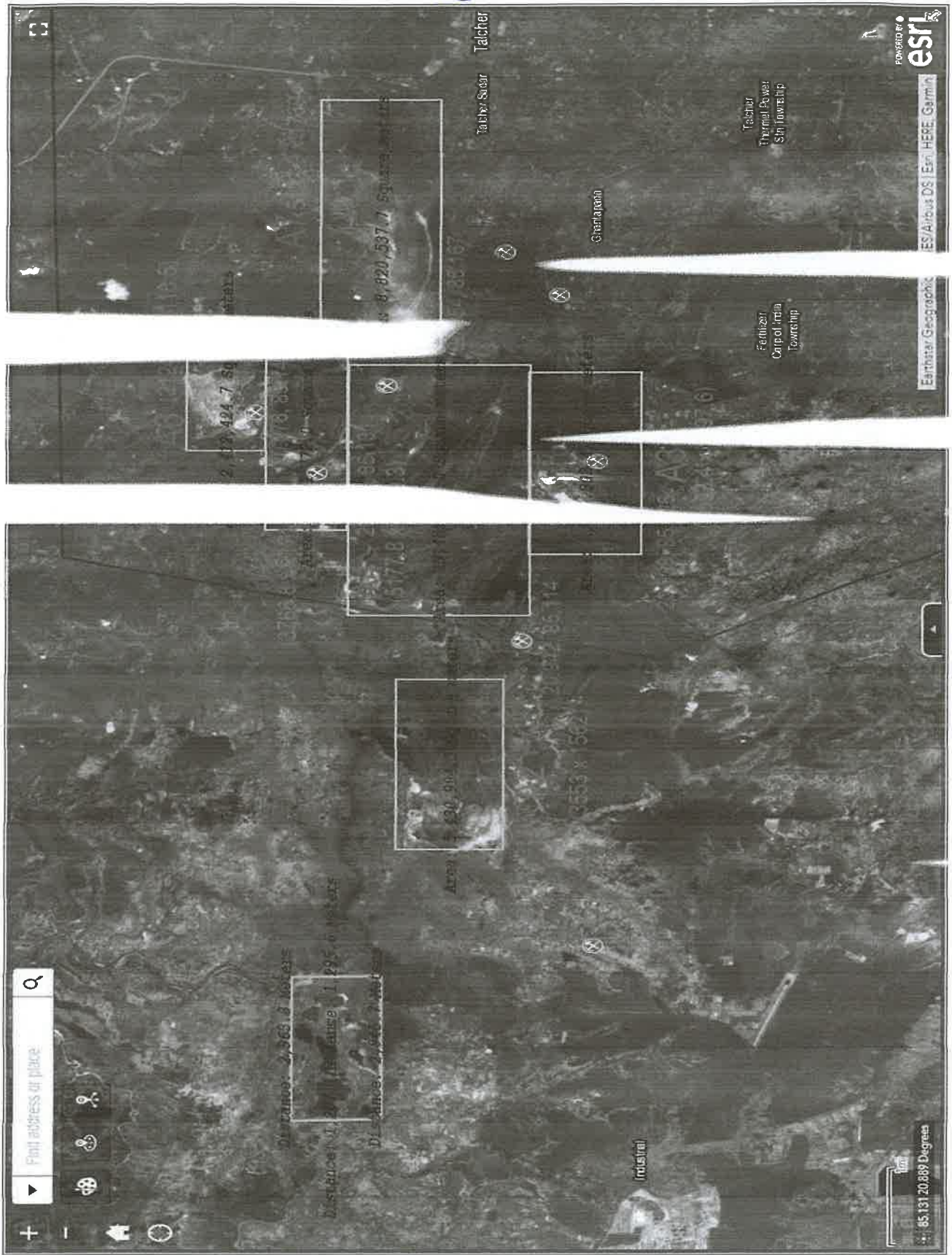


Figure – 10: Mining Area Division in Angul – Talcher CPA for Ar Source Emis: on Inventory

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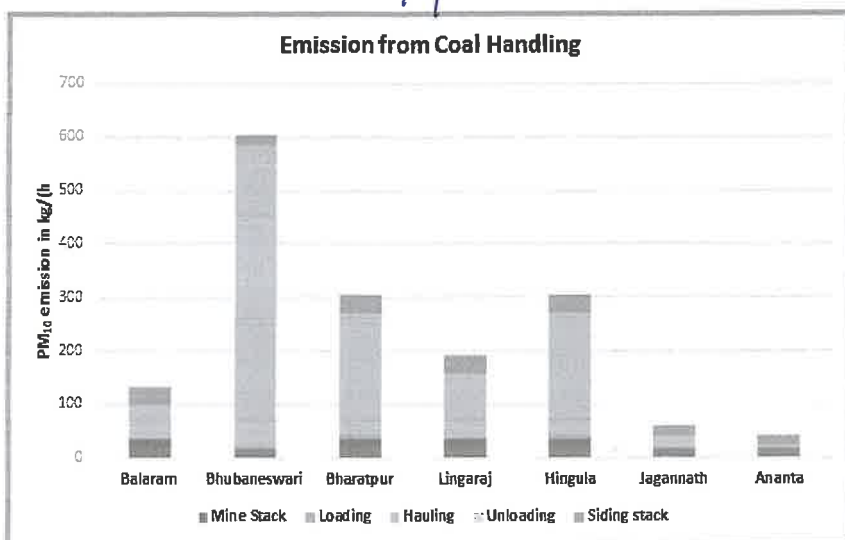


Fig. 11: Mine-wise emission from mining operation

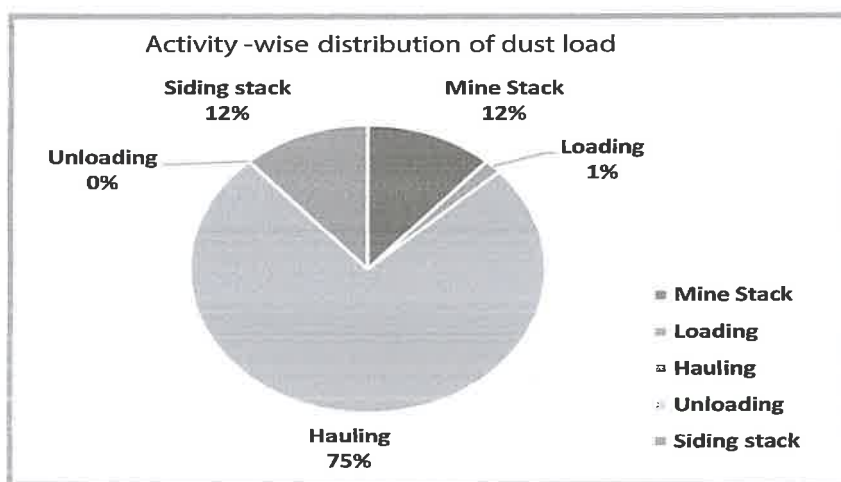


Fig. 12: Activity-wise emission of PM₁₀ from mining operation

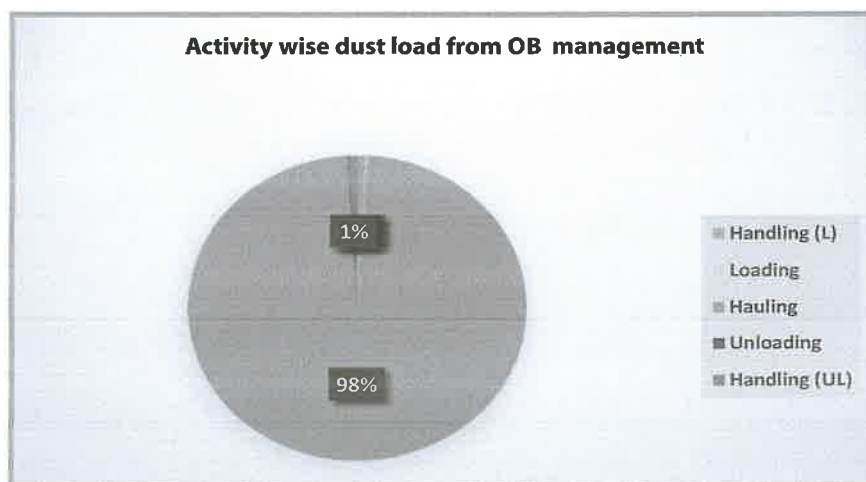


Fig. 13: Activity-wise emission from OB handling

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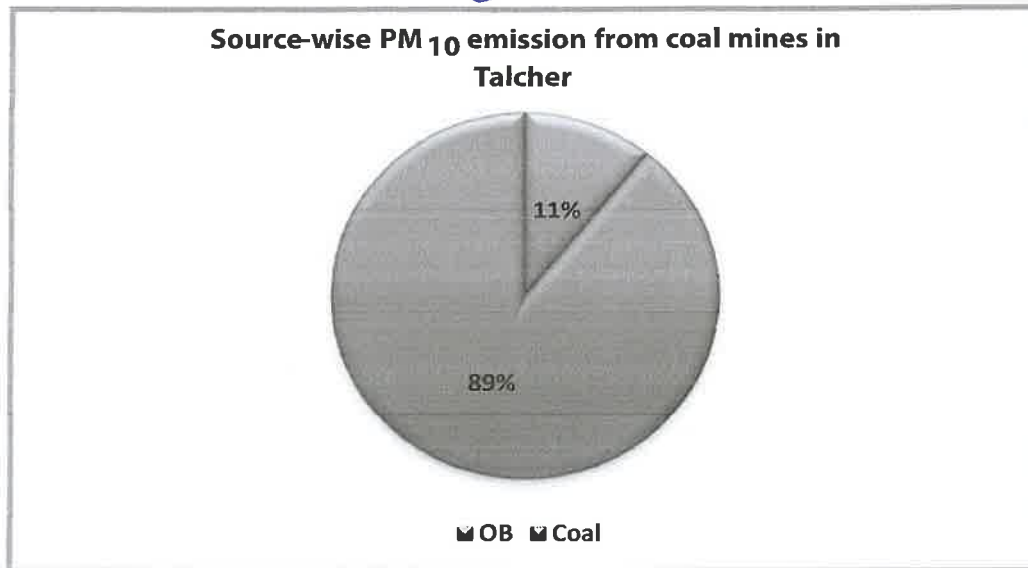


Fig. 14: Contribution of emission from mining and OB handling

5.3 Transport Emission

A study was conducted by IIT Delhi on Heat Island effect in Angul-Talcher area in the year 2018. As part of the study, a traffic volume survey was carried out on the major highways passing through the study area. The result of the survey is presented in **Table 3**. In order to estimate transport related emission, the data collected during the above study is considered.

Table 3: Details of Traffic movement in Angul – Talcher

Sl. No.	Location	Heavy Vehicle (No / Day)			Light Vehicle (No / Day)		Total (No / Day)
		Bus and Mini Bus	Long Trailers & Loaded Trucks	Cars, taxis, Trekkers, Jeeps	Auto rickshaw / Three-wheeler	Two-Wheeler, Scooter & Motorcycle	
1.	Balhar Square	1618	4332	1334	1153	2932	11369
2.	Banarpal Square	2231	5790	3036	1521	5519	18097
3.	Gudiakateni Square	2211	4402	1516	1150	2224	11503
4.	Angul-Sambalpur-Chhendipada Square	2601	4790	2093	1949	4580	15713
						Total	56682

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For the modelling purpose, a total length of 175.40 km of the highway was taken into consideration. The width of the highway is 61 m (200ft). Transport related emission was modelled as a linear area source with an effective area of about 0.5 km². The emission factor for paved road was taken as per AP-42 using the following formula.

$$E = k \left(\frac{sL}{2}\right)^{0.65} \times \left(\frac{W}{3}\right)^{1.5} \dots\dots\dots (2)$$

where:

E= particulate emission factor (g/ sec-m²)

k= base emission factor for particle size range of PM₁₀ (4.6 g/VKT)

sL = road surface silt loading (grams per square meter)

W= vehicle weight (2 tons)

6. Air Quality Modelling and source Apportionment

6.1. Model Description

AERMOD view is a complete and powerful air dispersion modeling package that seamlessly incorporates the popular U.S. EPA models, AERMOD, ISCST3 and ISC-Prime into one interface without any modifications to the models. These models are used extensively to assess pollution concentration and deposition from a wide variety of sources. In Angul – Talcher CPA for air quality modelling, AERMOD View model is used. AERMOD is a regulatory steady-state plume modeling system with three separate components: AERMOD (AERMIC Dispersion Model), AERMAP (AERMOD Terrain Preprocessor) and AERMET (AERMOD Meteorological Preprocessor). The AERMOD model includes a wide range of options for modeling air quality impacts of pollution sources, making it a popular choice among the modeling community for a variety of applications. AERMOD contains basically the same options as the ISCST3 model.

For air quality modeling of Angul – Talcher, an area of 50km length and 50km width is selected covering all the industries and mines within the CPA. The south west corner of the area is 20°45' N and 84°55' E.

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6.2 Model output and analysis of results for source apportionment

The model was run with the meteorological data of 2018 from July to December. The model estimates the concentration of PM₁₀ for each grid of 1 x 1 km². The predicted value of the model in the grid was compared with the observed value of manual monitoring over the same period and the comparative values are presented in **Table 4**. The model outputs in terms of predicted contours of PM₁₀ concentration of entire study area and the cities of Angul and Talcher are depicted in **Appendix II**, separately for each group of source-Industry, Mines and Transport.

Table 4: Comparison of predicted and observed value

Sl. No.	Station	Predicted value (PM ₁₀ in µgm/m ³)	Observed value (PM ₁₀ in µgm/m ³)
1.	Bharatpur Guest House	426.25	124.56
2.	SPCB Regional Office, Angul	102.99	98.94
3.	Nalco township, Angul	109.14	102.73
4.	TTPS Guest House, Talcher	132.98	95.4
5.	Dera Chowk, Talcher	619.66	237.34

Though it appears that more rigorous model calibration is required for model validation, the predicted value and observed values are within a range of fair degree of agreements.

The model was run by considering separate group of sources, such as industrial emission, mining emission and transport related emission for Angul and Talcher separately. In order to arrive at the contribution of each sources in both the cities the mean values of all the grids contained within the cities of Angul and Talcher was estimated for each group of sources and are presented in **Table 5**. The percentage of contribution as per the model is indicated within the parenthesis.

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Table 5: Estimated value of sector-wise contribution

	Industries	Mines	Transport	Total
Angul	7.995 (8%)	78.52 (78%)	14.02 (14%)	100.54 (100%)
Talcher	5.36 (3.4%)	144.95 (92.5%)	6.45 (4.1%)	156.76 (100%)

The relative contribution of different sources in Angul and Talcher are shown as Figure 15.

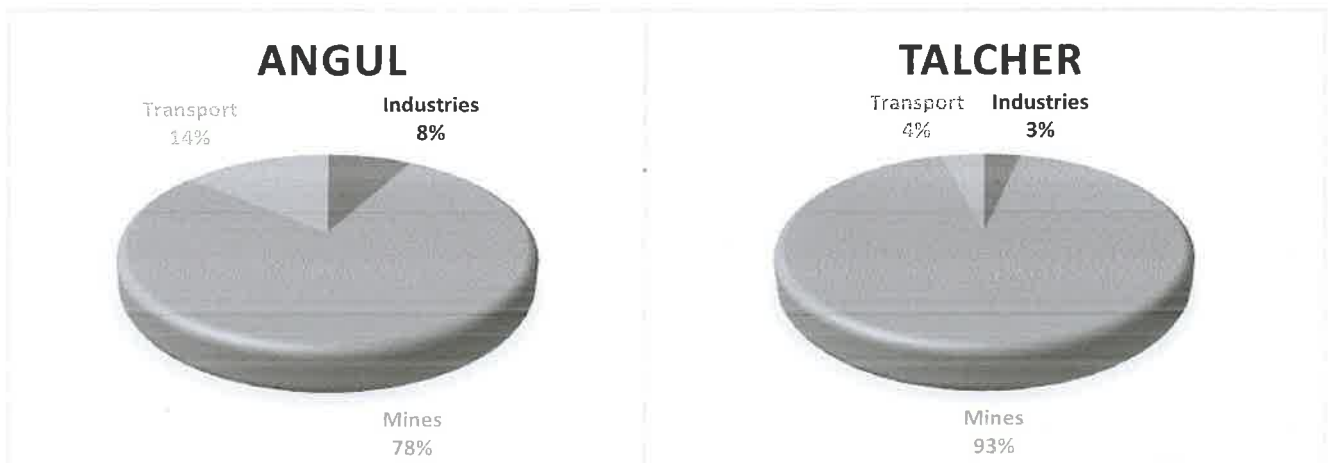


Fig. 15: Relative contribution of PM₁₀ from major sources in Angul and Talcher

7. Conclusion

The study for apportionment of air pollution sources was carried out for both Angul and Talcher city, since contribution to air pollution in both the cities are common. From this rapid study the following conclusions can be drawn.

1. From the air quality monitoring conducted by the State Pollution Control Board, it is observed that the PM₁₀ and PM_{2.5} exceed the NAAQS level. Other gaseous pollutants level is however well below the standard. Therefore, the apportionment study was carried out for PM₁₀ only.

Adh,

2. The current study for apportionment of PM_{10} was carried out by using air quality dispersion model.
3. The model output and the observed value was found to be within a fair degree of agreement.
4. The study indicates that mining operation is the largest contributor to air pollution in Angul and Talcher. Its contribution in Angul is 78% and in Talcher it is 92%.
5. Transportation is the second most important contributor to air pollution in the study area. In Angul, the transport Sector contribution is about 14% and in Talcher, its contribution is only 4.1%.
6. In both the cities the contribution of industries has been observed to be the minimum.

8. Limitations of the study

Though all care has been taken to make sure that contribution of different sources of PM_{10} pollution has been taken into account, but due to paucity of time and limitation of resources, this report is constrained with certain limitation as discussed in the following section.

1. The emission inventory has been prepared on the basis of normal state of activity and generalized emission factors. The emission assessment refers to the activities of the year 2018. The present position of industrial and transport activities may be slightly different than that of the year 2018.
2. The process of inventorying the emission from industrial, mining and transport sectors are based on data available with State Pollution Control Board. Moreover, this assessment has not been subjected to rigorous quality assurance program, due to lack of adequate data. Therefore, a structured quality assurance of emission inventory may improve the reliability of the result.
3. Due to paucity of time and data insufficiency, model calibration and data validation of Air Quality Model could not be carried out. Improved data collection through field study, laboratory analysis and use of advanced chemical mass balance may substantially improve the confidence level of the study outcome.



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ANNEXURE -4

OFFICE OF THE MUNICIPAL COUNCIL, TALCHER
DIST :- ANGUL

Phone No - (06760) 240259

E-Mail ID : e.o.talcher@gmail.com

Letter No. 2775 / Dt. 29/07/21

To,

The Member Secretary,
State Pollution Control Board,
Odisha, Bhubaneswar.

Sub : Nomination of Nodal officer under National Clean Air Programme (NCAP) and formation of AIR quality and also the details of air quality management cell of Talcher Municipality.

Ref :- Letter No.2747, Dt.23.02.2021 of SPCB, Odisha.

Sir,

With reference to the letter cited above on the subject, I am forwarding herewith the name of Nodal Officer & also the detail of Air Quality Management Cell as per the names mentioned given below.

- | | |
|---|-----------------|
| 1. Sri Jayant Kumar Parida , Municipal Engineer | - Nodal Officer |
| 2. Smt. Pranati Nanda, Junior Engineer | - Member |
| 3. Sri Dandadhar Garnayak , Junior Asst. | - Member |
| 4. Sri Biswajit Dash, Junior Asst. | - Member |
| 5. Sri Damodar Gajendra, Amin | - Member |
| 6. Sri Jitendra Kanungo, Sanitary Inspector | - Member |
| 7. Miss Suchismita Nayak, Sanitation Expert | - Member |

Yours faithfully


Executive Officer
Talcher Municipality

Memo No 2776 / Date 29/07/21

Copy submitted to the Director Municipal Administration and Ex-Officio, Addl. Secretary to Govt. H&UD Deptt ,Odisha, Bhubaneswar for favour of kind information and necessary action.


Executive Officer
Talcher Municipality

Memo No 2777 / Date 29/07/21

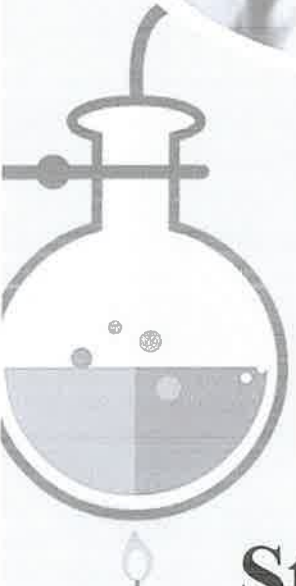
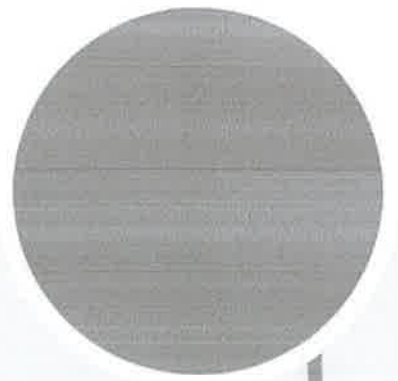
Copy submitted to the RO, SPCB, Angul / person concerned favour of kind information and necessary action .


Executive Officer
Talcher Municipality

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ATTESTED

Air Pollution Emergency Response Plan



TALCHER

**State Pollution Control Board
Odisha**



August 2020

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1. Background

The air quality in cities are influenced by city-level activities and meteorological conditions. At some point of time in a year, due to high intensity activities and adverse metrological conditions the air quality deteriorates to such an extreme level that it poses significant health risk. Particularly the elderly people, sick persons, women and children are worst affected.

Air quality is measured through several parameters. In order to communicate the air quality in a comprehensive and simple manner the Central pollution Control Board (CPCB) has developed an Air Quality Index (AQI) that is used across the country for expressing air quality. The AQI classifies the air quality from 'Good' to 'Severe' following a protocol that uses PM₁₀, PM_{2.5}, SO₂ and NO_x as the input air quality parameters.

Due to intense urban activities, it is observed that air quality in urban areas are falling below 'satisfactory' quality in unfavourable meteorological condition, particularly during winters at a greater frequency. Therefore, an appropriate intervention mechanism has become essential to restore urban air quality and at the same time take precautionary measure to minimize health risk.

Management of air quality involves multiple agencies like, State Pollution Control Board, Forest & Environment Department, District Administration, Urban Local Bodies, Traffic Police, Transport Department and Education Department etc. This document outlines the actions to be taken by different agencies and departments, in case an emergency situation arises in terms of air quality in Talcher City to bring back the air quality to an acceptable level.

2. Air Quality Index

A key tool in the effort to manage air quality is the Air Quality Index, or AQI. The AQI is used to provide simple information about the city air quality. The AQI focuses on health effects which may experience within a few hours or days after breathing unhealthy air. Higher the AQI value, the greater is the level of air pollution and the greater the health concern. The classification of air quality in terms of AQI and corresponding health effect are presented in **Table – 1**.

Table 1: Air Quality Index and Health Effect

Sl. No.	AQI	Class	Colour Coding	Health Impact
1	0-50	Good		Minimal impact
2	51-100	Satisfactory		Minor breathing discomfort to sensitive people
3	101-200	Moderate		Breathing discomfort to the people with lungs, asthma and heart diseases
4	201-300	Poor		Breathing discomfort to most people on prolonged exposure
5	301-400	Very Poor		Respiratory illness on prolonged exposure
6	401-500	Severe		Affects healthy people and seriously impacts those with existing diseases

3. Air Pollution Emergency Response Plan (APERP)

The proposed Air Pollution Emergency Response Plan (APERP) includes set of measures to be implemented with greater vigour and stringency to prevent and avoid high level of air pollution in cities. This is linked to the national air quality index that categorises daily air quality as *good*, *satisfactory*, *moderate*, *poor*, *very poor*, *severe* and *emergency*. All actions suggested for each category are cumulative and add up to the level of emergency as air quality worsens.

The proposed emergency measure, approach for each pollution source according to the Air Quality Index (AQI) categories includes appropriate measures for each level of pollution in terms of PM₁₀ and PM_{2.5}. While the comprehensive clean air action plan must be implemented round the year, the APERP measures are meant to be temporary measures for duration of smog episodes and are implemented according to the severity of the air pollution levels. Once the levels come down and stabilize, measures are withdrawn. The objective of the APERP is to prevent pollution from getting worse when adverse weather conditions trap and spike pollution.

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For APERP implementation, a scientific Task Force under OSPCB, will advise the High-powered committee in the Forest and Environment Department on the daily pollution levels and forecasting, based on monitoring. Accordingly, the High-powered Committee may issue notices to the city authorities to implement the pre-defined action. Each implementing department will appoint a nodal officer to facilitate implementation. The action notified for *moderate* and *poor* that are largely about stringent enforcement in different sectors can become default action for continuous implementation throughout the year. Additional measures meant for *very poor* and *severe* may be notified, since such situation develops especially during calm and inversion conditions.

This will require daily air quality data reporting on the SPCB website and public dissemination system on air quality and health alert. The measures can be customized based on the special needs and the unique pollution profile of the city.

<u>Severe + or Emergency</u>	
When PM _{2.5} levels cross 300 microgram per cum or PM ₁₀ levels cross 500 microgram per cum (or 5 times above the standard) or persist for 48 hrs or more.	
Action to be taken	Agency responsible
Stop entry of diesel HMV / LMV traffic into city (except essential commodities)	<ul style="list-style-type: none"> • Traffic Police • Talcher Municipality
Stop construction activities	<ul style="list-style-type: none"> • State Pollution Control Board (SPCB) • Talcher Municipality
Introduce odd and even scheme for private vehicles based on license plate numbers Or introduce low emissions zones in the city to stop entry of polluting vehicles (old and ageing and polluting diesel vehicles etc). For this purpose introduce sticker system as per MORTH guidelines to indicate fuel and date of manufacture of vehicles.	<ul style="list-style-type: none"> • Transport Department • Traffic Police
State Pollution Control Board Task Force to take decision on any additional steps including shutting of schools	<ul style="list-style-type: none"> • Education Department • State Pollution Control Board (SPCB)

Severe

When PM_{2.5} levels are above 250 microgram per cum or PM₁₀ levels are above 430 microgram per cum

Action to be taken	Agency responsible
Close brick kilns, Hot Mix plants, Stone Crushers and other highly polluting units / activities or as applicable locally	<ul style="list-style-type: none"> • Forest & Environment Department • State Pollution Control Board (SPCB) • District Collector, Angul • Police
Shut down / minimize operation of polluting coal based power plant in neighbouring area.	<ul style="list-style-type: none"> • State Pollution Control Board (SPCB) • District Collector, Angul
Intensify public transport services. Introduce differential rates to encourage off-peak travel.	<ul style="list-style-type: none"> • Transport Department • State Transport Corporations
Increase frequency of mechanized cleaning of road and sprinkling of water on roads. Identify road stretches with high dust generation.	<ul style="list-style-type: none"> • All road owning agencies including Talcher Municipality, Public Works Department and National Highway Authority of India
Restrict movement of trucks inside the coal field mine areas	<ul style="list-style-type: none"> • State pollution control Board (SPCB) • Department of Steel and mines, Govt of Odisha
Regulate Coal transport by road.	<ul style="list-style-type: none"> • Department of Steel and Mines, Govt of Odisha • Transport Department • District Collector, Angul

Very Poor

When PM_{2.5} levels are between 121-250 microgram per cum or PM₁₀ levels are between 351-430 microgram per cum

Action to be taken	Agency responsible
Stop use of diesel generator sets	<ul style="list-style-type: none"> • State Pollution Control Board (SPCB)

Enhance parking fee by 3-4 times	<ul style="list-style-type: none"> Talcher Municipality
Augment public transport services by increasing frequency	<ul style="list-style-type: none"> Department of Transport State Transport Commissioner
Stop use of coal/firewood/briquettes in hotels and open eateries	<ul style="list-style-type: none"> Talcher Municipality
Residential societies and individual house owners to provide electric heaters during winter to security staff to avoid open burning	<ul style="list-style-type: none"> Talcher Municipality Resident Welfare Associations
Alert in newspapers/TV to advice people with respiratory and cardiac patients to avoid polluted areas and restrict outdoor movement.	<ul style="list-style-type: none"> State Pollution Control Board (SPCB)
<p><u>Moderate to poor</u></p> <p>Poor - When PM_{2.5} levels are between 91-120 microgram per cum or PM₁₀ levels are between 251-350 microgram per cum; Moderate - When PM_{2.5} is between 61-90 microgram per cum or PM₁₀ is between 101-250 microgram per cum</p>	
Action to be taken	Agency responsible
Stringently enforce/stop garbage burning in landfills and other places and impose heavy fines on person responsible	<ul style="list-style-type: none"> Talcher Municipality
Close/stringently enforce all pollution control regulations in brick kilns and industries	<ul style="list-style-type: none"> State Pollution Control Board (SPCB) District Collector, Angul
Stringently enforce pollution control in thermal power plants through Pollution Control Board monitoring	<ul style="list-style-type: none"> State Pollution Control Board (SPCB)
Do periodic mechanized sweeping on roads particularly in roads with heavy traffic and water sprinkling every two days	<ul style="list-style-type: none"> Talcher Municipality Traffic Police PWD
Strict vigilance and no tolerance for visible emissions – stop plying of visibly polluting vehicles by impounding or heavy fine	<ul style="list-style-type: none"> Department of Transport Traffic Police
Stringently enforce rules for dust control in construction activities and close non-compliant sites	<ul style="list-style-type: none"> District Collector, Angul Police
Deploy traffic police for smooth traffic flow at identified vulnerable areas	<ul style="list-style-type: none"> Traffic Police

Divert non-destined truck traffic	<ul style="list-style-type: none"> • Talcher Municipality • Traffic Police
Strictly enforce Supreme Court orders on firecrackers	<ul style="list-style-type: none"> • State Pollution Control Board (SPCB) • District Collector, Angulin consultation with Chief Controller of Explosives, Petroleum and Explosive Safety Organization (PESO) • Police
Ensure fly ash ponds are watered every alternate day during summer months (March-May)	<ul style="list-style-type: none"> • State Pollution Control Board (SPCB) • District Collector, Angul
Information dissemination, social media, mobile Apps should be used to inform people about the pollution levels, contact details of control room, enable them to report polluting activities/sources to the concerned authorities, and actions that will be taken by government based on the level of pollution.	<ul style="list-style-type: none"> • State Pollution Control Board (SPCB) • District Collector, Angul • I & PR Department

4. Public Action in Emergency

While the National Air Quality Index (AQI) and advisory of the taskforce will inform people about the risks of exposure, people are also expected to take precautionary measures to protect themselves. Suggested actions by public are listed below:

Level according to AQI	Action
Severe, Very poor and Poor	Those suffering from heart diseases, asthma, and other respiratory disease may consider avoiding undue and prolonged exposure
	Schools to suspend all outdoor activities and sport events
	Report visible emissions from vehicles, industries, power plants, garbage burning, and other non-compliances to the respective control rooms
	Do not use diesel and kerosene generators
	Maintain vehicles properly (PUC certificate, replace car air filter, maintain right tyre pressure)
	Minimize unnecessary travel, use public transport & avoid using private vehicles



VAKALATNAMA

IN THE NATIONAL GREEN TRIBUNAL, EASTERN ZONE, KOLKATA

OA No. Of 2024

Between

Sridhar Samal ... Petitioner

Versus

Union of India and others ... Opp. Parties

Know all men by these presents, that by Vakalatnama. I/we,

*Sridhar Samal aged 45 years s/o Krishna Samal
At - Kanasmunda P.O - Talcher Dist - Angul - 759117*

Plaintiff/Defendant/Appellant/Respondent/ Petitioner/ Opposite Party in the aforesaid Suit/Appeal/ Case do hereby appoint and retain **AFRAAZ SUHAIL**

,Advocates, to appear for me/us in the above case, and to conduct and prosecute (or defend) the same and all proceedings that may be taken in respect of any application connected with the same or any decree or order passed therein including all applications for return of documents or receipt of any moneys that may be payable to me/us in the said case and also in applications for review in appeals under Orissa High Court Order and in applications for leave to appeal to Supreme Court, I/we authorize my/our Advocate(s) to admit any compromise lawfully entered in the said case.

Dated *8/2/24*

Received from the executant(s)
through certify that I hold no
brief for the other side,
satisfied and accepted

Sridhar Samal

SIGNATURE OF THE EXECUTANT(S)

Am M 0-367-17
M-904053565 5
Advocate

Accepted as above