

**SUMMARY ON
ENVIRONMENTAL IMPACT ASSESSMENT
REPORT**

OF

Phil Coal Beneficiation Pvt. Ltd.

[Expansion of Coal Washery from 2.5 MTPA to 5.0 MTPA Wet type coal washery]

at

Ghutku Villages, Takhatpur Tehsil,
Bilaspur District, Chhattisgarh

Submitted to

**CHHATTISGARH ENVIRONMENT CONSERVATION BOARD
Chhattisgarh**



1.0 PROJECT DESCRIPTION

Phil Coal Beneficiation Pvt. Ltd. is an existing 2.5 MTPA Coal washery located at Ghutku Village, Takhatpur Tehsil, Bilaspur District, Chhattisgarh. Existing plant has obtained Environment Clearance from MoEF&CC, New Delhi vide F.No. J-11015/418/2015-IA.II (M) dt. 31st July 2017, 16th April 2018 (EC Amend.) & 21st June 2019 (EC Amend.). Accordingly obtained Consent to Establishment (CTE) from Chhattisgarh Environment Conservation Board (CECB) vide no. 1173 & 1175/TS/CECB/2018 Naya Raipur dt. 27th April 2018. Subsequently obtained Consent to Operate (CTO) from CECB and same is valid till 30th April 2022.

Now company proposed to expand the coal washery from 2.5 MTPA to 5.0 MTPA Heavy Media Cyclone type Coal Washery in the existing plant premises of 9.93 Ha. at Khasra no. 2755/3, 2755/5, 2756/1, 2756/2, 2758/3, 2759/1, 2759/2, 2782/1, 2787/2, 2807/2, 2807/3, 2941, 2942, 2942/1, 2942/2, 2943, 2944, 2946/2, 2947/1, 2947/2, 2947/3, 2948, 2950/3, 2951/2, 2951/4, 2952, 2953, 2954, 2955, 2955/6, 2956, 2957, 2958, 2959/1, 2959/2, 2959/3, 2962, 2963, 2964/1, 2965, 2968, 2971/1, 2971/2, 2971/3, 2971/4, 2972 at Ghutku Village, Takhatpur Tehsil, Bilaspur, Chhattisgarh.

Total land for the existing plant is 9.93 Ha. Total land is in possession of the management. Proposed expansion will be taken up in the Existing plant premises only. No additional land envisaged for proposed expansion. The project cost envisaged for the proposed expansion project is Rs. 20.0 Crores.

As per the Ministry of Environment, Forest & Climate Change, New Delhi notification, dated 14th September, 2006 and its subsequent amendments, coal washery above 1 MTPA capacity has been classified under Category 'A'. The Ministry of Environment, Forest & Climate Change (MOEF&CC), New Delhi has accorded Terms of Reference (TOR) for the proposed expansion project vide File no. IA. J-11015 /418/2015 – IA-II (M), dated 1st November 2021. The EIA Report has been prepared by incorporating the TOR stipulated by MOEF&CC, New Delhi.

Pioneer Enviro Laboratories & Consultants Private Limited, Hyderabad, which is accredited by NABET, Quality Council of India, vide certificate No. NABET/ EIA/ 1922/ RA 0148, for preparing EIA report for coal washery, have prepared Environmental Impact Assessment (EIA) report for the



proposed expansion project by incorporating the TOR approved by Ministry of Environment, Forest & Climate Change, New Delhi. The report contains detailed description of the following:

- Characterization of status of environment within an area of 10 km radius from the plant for major environmental components including air, water, noise, soil, flora, fauna and socio-economic environment.
- Assessment of air emissions, liquid waste and solid waste from the proposed expansion project along with the noise level assessment.
- Environmental Management Plan comprising of emission control measures proposed to be adopted in the proposed project, solid waste management, Greenbelt development, etc.
- Post Project Environmental Monitoring & Budget for Environmental Protection Measures

1.1 ENVIRONMENTAL SETTING WITHIN 10 Km. RADIUS OF THE PLANT SITE

The following is the environmental setting within the 10 Km. radius of the plant site:

Table No. 1.1: Environment Setting within 10 Km. radius of the site

S.No.	Description	Distance w.r.t. site / Remarks
1.	Type of Land (Project Site)	Industrial land
2.	National Park/ Wild life sanctuary / Biosphere reserve / Tiger Reserve / Elephant Corridor / migratory routes for Birds	None
3.	Historical places / Places of Tourist importance / Archeological sites	None
4.	Industrial areas / cluster (MoEF&CC office memorandum dated 13 th January 2010)	None
5.	Defence Installations	None
6.	Nearest village	Karhipara – 0.6 Km. (SE)
7.	No. of Villages in the Study Area	70
8.	Nearest Hospital	Ghutku – 1.8Kms.(N)
9.	Nearest School	Ghutku – 2.0Kms.(N)
10.	Forests	No forest land within 10 Kms. radius of the project site.
11.	Water body	Unnamed canal passing adjacent to the plant site, Arpa river (2.0 Kms.), Gokenha Nallah (2.5 Kms.), Ghongha Nadi (7.5 Kms.) & Kurung Right Bank Canal (6.0 Kms) are flowing within 10 Km. radius of the Plant No River / Stream passes through the proposed project site.



S.No.	Description	Distance w.r.t. site / Remarks
12.	List of Industries / Mining activity	M/s. Phil Minerals Beneficiation & Energy Pvt. Ltd. – Coal Crusher (SSE – 3.0 Kms.) M/s. Bhatia Coal – Coal Crusher (S – 1.9 Kms.) M/s. Paras Power & Coal Beneficiation Ltd. (W – 0.2 Kms.), M/s. Satya Power & Ispat
13.	Nearest Highway	NH # 130 (Ambikapur-Bilaspur-Raipur) – 7.3 Kms. (By Road) & SH # 7 – 6.9 Kms. (By Road) from plant.
14.	Nearest Railway station	Company is having its own railway siding adjacent to the plant site, serving from Ghutku RS at distance at 0.65 Km. from the plant site.
15.	Nearest Port facility	None
16.	Nearest Airport	None
17.	Nearest Interstate Boundary	No interstate boundary within 10 Km radius of the project site. (Nearest interstate boundary is Madhya Pradesh at a distance of 64.0kms. from the Project site)
18.	Seismic zone as per IS-1893	Seismic zone – II
19.	R & R	There is no rehabilitation and resettlement issue, as there are no habitations present in the site area.
20.	Litigation / court case is pending against the proposed project / proposed site and or any direction passed by the court of law against the project	None

1.2 PLANT CONFIGURATION AND PRODUCTION CAPACITY

Phil Coal Beneficiation Pvt. Ltd has proposed coal washery with the following capacity.

Table No.1.2: EXISTING & PROPOSED UNITS, PRODUCTS & THEIR PRODUCTION CAPACITIES

S.No.	Unit	Existing Operating Plant	Proposed Expansion	After Proposed Expansion
1.	Coal washery (Wet Type)	2.5 MTPA	2.5 MTPA	5.0 MTPA (2 x 2.5 MTPA)

1.3 RAW MATERIAL REQUIRMENT

The following will be the raw material requirement for the existing and proposed expansion project along with its source is given as below:



S.No.	Raw Material	Quantity (MTPA)	Source
1.	Raw Coal	2.5	Coal will be sourced from SECL mines namely Deepka, Gevra, Kusmunda and other mines of South Eastern Coalfield Limited [on DO basis]

1.4 Manufacturing Process

Coal washery comprises of coal crushing & screening and washing of coal to produce clean coal with ash content less than 34%. Wet type of coal washery is proposed as it will have lesser environmental problems compared to the dry type of washery and to suit to client's specific requirement of lower ash content. Closed loop water system is proposed in the process. Zero effluent discharge will be maintained in the proposed project.

The process consists of crushing of the ROM coal in a single toothed roll crusher. The crushed coal is then washed in Zig to produce clean coal and middling with the help of water stream and air pressure.

1.5 Water Requirement

Water required for existing plant is 430 KLD mainly for process and domestic purpose and same is sourced from Ground Water source. Water required for proposed expansion will be 425 KLD, which consists of mainly for process, dust suppression, greenbelt and domestic purpose and will be sourced from Ground water source. Total water requirement after proposed expansion will be 855 KLD. NOC for 855 KLD Ground water abstraction has been obtained from CGWA and same is applied for renewal.

The following is the break-up of the water requirement for proposed project.

WATER REQUIREMENT (Existing & Proposed)

S.No	REQUIREMENT	QUANTITY (KLD)
1.	For Coal washery process	850
2.	For Domestic purpose	5
	Total	855

1.6 Waste Water Generation

- Closed circuit water system is being adopted in the existing coal washery, hence no wastewater is being discharged outside the plant. Only wastewater generation from



the existing plant is sanitary wastewater and same is being treated in Septic tank following soak pit.

- Closed circuit water system will be adopted in the proposed expansion of coal washery also, hence no wastewater will be discharged outside the plant. Only wastewater generation will be sanitary wastewater and same will be treated in Septic tank following soak pit. Total sanitary wastewater generated after proposed expansion will be 4 KLD.
- As it is proposed to install Heavy media-based Coal Washery, in which water after washing of coal (waste water) will be recycled back.
- The efficiency of settling pond of the waste water system will be 95 %.
- The wastewater from the plant will lead to the thickener and flocculants will be settlement of suspended solids and helps to give a clearer overflow.
- The settled solids are collected at the bottom cone of the thickener tank.
- The solids which are collected in the bottom of the thickener will be pumped to the multirole belt press for reclamation of water. The solid dried cake will be blended with rejects.
- The overflow of the thickener which is clear water will be recycled.
- Zero effluent discharge is being maintained in the existing plant and same will be continued after proposed expansion also.
- All the MoEF norms/CREP recommendations for coal washeries will be implemented in the proposed expansion project also.

WASTE WATER GENERATION

S.No.	SOURCE	QUANTITY (KLD)
1	Sanitary wastewater	4
	Total	4

Wastewater Characteristics

The characteristics of sanitary waste water (untreated) will be as following:

PARAMETER	CONCENTRATION
pH	7.0 – 8.5
BOD	200 – 250 mg/l
COD	300 – 400 mg/l
TDS	800 – 900 mg/l

2.0 DESCRIPTION OF ENVIRONMENT

Base line data has been collected on ambient air quality, water quality, noise levels, flora and fauna and socio-economic details of people within 10 km radius of the plant.

2.1 Ambient air quality

Ambient air quality was monitored for PM_{2.5}, PM₁₀, SO₂, NO_x, CO, Arsenic, Lead and Silica at 8 stations including plant site during **15th October 2021 to 15th January 2022**. The following are the concentrations of various parameters at the monitoring stations:

Ambient Air Quality Summary

S.No.	Parameter		Concentration
1.	PM _{2.5}	:	18.5 to 38.7 µg/m ³
2.	PM ₁₀	:	34.4 to 66.5 µg/m ³
3.	SO ₂	:	7.0 to 19.6 µg/m ³
4.	NO _x	:	7.2 to 28.4 µg/m ³
5.	CO	:	314 to 1085 µg/m ³
6.	Pb	:	0.003 – 0.001 µg/m ³
7.	As	:	Less than 1.82 ng/m ³

2.2 Water Quality

2.2.1 Surface Water Quality

Arpa river (2.0 Kms. – East), Ghongha Nadi (7.9 Kms. - West), Gokena Nallah (2.9 Kms. - West) are present within 10 Km. radius of the project site. 2 no. of samples i.e. 60m Upstream & 60 m Downstream from Arpa River and one sample from Ghongha Nadi, Gokena Nallah, Karhipara Village Pond have been collected and analyzed for various parameters. No other surface water samples have been collected as the study period. The analysis of samples shows that all the parameters are in accordance with BIS-2296 specifications.

2.2.2 Ground Water Quality

8 No. of ground water samples from open wells / bore wells were collected from the nearby villages to assess ground water quality impacts and analyzed for various Physico-Chemical parameters. The analysis of samples shows that all the parameters are in accordance with BIS: 10500 specifications.



2.3 Noise Levels

Noise levels were measured at 8 locations during day time & Night time. The noise levels at the monitoring stations are ranging from 44.73 dBA to 51.72 dBA.

3.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

3.1 Prediction of impacts on air quality

The likely emissions from the proposed expansion of coal washery and proposed Steel plant (adjacent to coal washery unit) are PM₁₀, SO₂, NO_x & CO. The predictions of Ground level concentrations have been carried out using Industrial Source Complex (ISC-3) model. Meteorological data such as wind direction, wind speed, max. and min. temperatures collected at the site have been used as input data to run the model.

The predicted max. Incremental rise in PM concentration (24 hourly) due to the proposed expansion of coal washery and proposed steel plant (adjacent to coal washery) will be 0.42 µg/m³ at a distance of 1100 m from the origin stack in the down wind direction over the baseline concentrations.

The predicted incremental rise in PM concentration due to the Vehicular emission from proposed expansion of coal washery and proposed steel plant (adjacent to coal washery) will be 0.98 µg/m³. Hence the combined total predicted incremental rise due to the emission from proposed expansion of coal washery and proposed steel plant (adjacent to coal washery) will be 0.42 µg/m³ + 0.98 µg/m³ = 1.4 µg/m³

There will be no SO₂ concentration from the proposed expansion of Coal washery, as there is no source of SO₂ emission from proposed expansion of coal washery. Hence the predicted max incremental rise in SO₂ concentrations (24 hourly) will be due the proposed steel plant adjacent to the coal washery unit i.e. 3.3 µg/m³ at a distance of 1100 m from the stack in the down wind direction over the baseline concentrations

The predicted max. Incremental rise in NO_x concentration (24 hourly) due to the proposed expansion of coal washery and proposed steel plant (adjacent to coal washery) will be 1.86 µg/m³ at a distance of 1100 m from the origin stack in the down wind direction over the baseline concentrations.



The predicted incremental rise in NO_x concentration due to the Vehicular emission from proposed expansion of coal washery and proposed steel plant (adjacent to coal washery) will be 8.7 µg/m³. Hence the combined total predicted incremental rise due to the emission from proposed expansion of coal washery and proposed steel plant (adjacent to coal washery) will be 1.86 µg/m³ + 8.7 µg/m³ = 10.56 µg/m³

The predicted incremental rise in CO concentration due to the Vehicular emission from proposed expansion of coal washery and proposed steel plant (adjacent to coal washery) will be 4.96 µg/m³.

NET RESULTANT MAXIMUM CONCENTRATIONS DUE TO THE PROPOSED EXPANSION PROJECT

Item	PM (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (µg/m ³)
Maximum average baseline conc. in the study area	66.5	19.6	28.4	1085
Maximum predicted incremental rise in concentration due to the proposed expansion of coal washery and proposed steel plant (adjacent to coal washery) (Point Sources)	0.42	3.3	1.86	Nil
Maximum predicted incremental rise in concentration due to the proposed expansion of coal washery and proposed steel plant (adjacent to coal washery) (Vehicular emissions)	0.98	Nil	8.70	4.96
Net resultant concentrations during operation of the proposed expansion of coal washery and proposed steel plant (adjacent to coal washery)	67.9	22.9	38.96	1089.96
National Ambient Air Quality Standards	100	80	80	2000

The predicted results show that the net resultant concentration (max. baseline conc. + max. incremental rise in conc.) of PM₁₀, SO₂, NO_x and CO will be well within the National Ambient Air Quality Standards after commissioning of proposed project. Hence there will not be any adverse impact on air environment due to the proposed project.

3.2 Prediction of impacts on noise quality

The major sources of noise generation in the proposed expansion project will be DG set & Crusher. The ambient noise levels will be within the standards prescribed by MoEF&CC vide notification dated 14-02-2000 under the Noise Pollution (Regulation & Control), Rules 2000 i.e. the noise levels will be less than 75 dBA during day time and less than 70 dBA during night time. Greenbelt will be



developed to further attenuate the noise levels. Hence there will not be any adverse impact due to noise on population in surrounding areas due to the proposed project.

3.3 Prediction of impacts on Water Environment

There will be no effluent generation in the coal washery unit, as closed loop water system will be adopted. Sanitary waste water will be treated in septic tank followed by soak pit. The water required for the proposed project will be met from Ground water source. NOC for 855 KLD Ground water abstraction has been obtained from CGWA and same is applied for renewal. Hence there will not be any adverse impact on water environment due to the proposed project.

3.4 Prediction of Impacts on Land Environment

All the required air pollution control systems will be provided to comply with CPCB / CECB norms. All solid wastes will be disposed / utilized as per CPCB / CECB norms. Greenbelt will be developed as per guidelines. Hence there will not be any adverse impact on land environment due to the proposed project.

3.5 Socio - Economic Environment

There will be further upliftment in Socio Economic status of the people in the area. Hence, there will be further development of the area due to the proposed expansion project. Due to this the economic conditions, the educational and medical standards of the people living in the study area will certainly move upwards which will result in overall economic development, improvement in general aesthetic environment and increase in business opportunities.

4.0 ENVIRONMENTAL MONITORING PROGRAMME

Post project monitoring will be conducted as per the guidelines of CECB and MoEF&CC are tabulated below:

MONITORING SCHEDULE FOR ENVIRONMENTAL PARAMETERS

S.No.	Particulars	Frequency of Monitoring	Duration of sampling	Parameters required to be monitored
1. Water & Waste water quality				
A.	Water quality in the area	Once in a month	Grab sampling	As per IS: 10500
2. Air Quality				



S.No.	Particulars	Frequency of Monitoring	Duration of sampling	Parameters required to be monitored
A.	Stack Monitoring	CEMS (all Stacks) Once in a month	--	PM PM, SO ₂ & NO _x
B.	Ambient Air quality	CAAQMS Quarterly in a Month	Continuously 24 hours	PM PM _{2.5} , PM ₁₀ , SO ₂ , NO _x & CO
C.	Fugitive emissions	Quarterly in a Month	8 hours	PM
3. Meteorological Data				
	Meteorological data to be monitored at the plant.	Daily	Continuous monitoring	Temperature, Relative Humidity, rainfall, wind direction & wind speed.
4. Noise level monitoring				
	Ambient Noise levels	Once in a month (Hourly)	Continuous for 24 hours with 1-hour interval	Noise levels

5.0 ADDITIONAL STUDIES

Existing plant is located at Ghutku Village, Takhatpur Tehsil, Bilaspur, Chhattisgarh. Existing plant is located in 9.93 Ha. of land and same is in possession of management. The proposed expansion project will be taken in the existing plant premises. No Rehabilitation and Resettlement is involved in the proposed expansion project. Hence, no R & R study has been carried out.

6.0 PROJECT BENEFITS

With the establishment of the proposed expansion project employment potential will increase. Land prices in the area will increase. The economic status of the people in the area will improve due to the proposed expansion project. Periodic medical checkups will be carried out. Top priority will be given to locals in employment. A separate budget will be allocated for Social welfare measures after completion of Public Hearing.



7.0 ENVIRONMENT MANAGEMENT PLAN

7.1 Air Environment

The following are air emission control systems proposed in the proposed expansion project:

S.No.	Stack attached	Control Equipment	PM emission
1.	Coal Crusher	Dust Extraction systems with Bag filters	< 50 mg/Nm ³

The main sources of dust pollution are raw material unloading areas, crushing operations of raw materials and their transfer points. Fugitive dust emissions are likely in the unloading areas, material transfer point, screening area etc. Fugitive emission in the material unloading area will be avoided by providing dust suppression system. Fugitive emission from material unloading operations, material transfer points will be controlled fully with total enclosure and all the transfer emission will be connected with extractor inlet point and will pass through a high efficiency Bag Filter before discharging into the atmosphere. Fugitive emissions will be regularly monitored in the plant area and CPCB stipulations regarding fugitive emission control and monitoring will be strictly followed.

7.2 Water Environment

There will not be any process waste water from the coal washery unit as closed loop water system will be adopted. The only waste water generation will be sanitary waste water of 4.0 cum/day and will be treated in septic tank followed by soak pit. Zero effluent discharge will be maintained in the proposed project.

7.3 Noise Environment

The major sources of noise in the proposed project will be DG set & crusher. All the machinery will be manufactured in accordance with MoEF&CC norms on Noise levels. The employees working near the noise generating sources will be provided with earplugs. The extensive greenbelt development proposed within the plant premises will help in attenuating the noise levels further. Noise barriers in the form of trees are recommended to be grown around administrative block and other utility units.



7.4 Land Environment

There will not be any process waste water from the coal washery unit as closed loop water system will be adopted. All the required Air emission control systems will be installed and operated to comply with CECB norms. Washery rejects will be given to reject based power plants. Extensive greenbelt will be developed in the plant premises. Desirable beautification and landscaping practices will be followed. Hence there will not be any impact due to the proposed project.

Solid waste generation and disposal

S. NO.	TYPE OF SOLID WASTE	Existing (MTPA)	Proposed Expansion (MTPA)	After Proposed Expansion (IN MTPA)	DISPOSAL PROPOSED
1	Washery rejects	0.50	0.50	1.0 MTPA	Will be given to reject based power plant of M/s. ACB India Ltd., M/s. KSK Mahanadi Power Co. Ltd., M/s. Hira Ferro & Power Pvt. Ltd., M/s. Hira Power.

7.5 Greenbelt Development

Greenbelt has been developed in the existing plant. Out of total 9.93 Ha. of land, 3.34 Ha. (more than 1/3rd of total) of land was developed with greenbelt.

7.6 Cost for Environment Protection

Capital Cost for Environment Protection for proposed expansion project : Rs. 160.0 Lakhs
 Recurring Cost per annum for Environmental protection for expansion project : Rs. 18.0 Lakhs

7.7 Implementation of CREP Recommendations

All the CREP recommendations will be strictly followed in the proposed coal washery plant.
