EXECUTIVE SUMMARY

1.0 PROJECT DESCRIPTION

1.1 INTRODUCTION

PHIL Coal Beneficiation Pvt. Ltd. proposes to set up a COAL BENEFICIATION PLANT at Village: Navapara (Tinda), Tehsil: Gharghora, District: Raigarh (C.G.) with capacity of 0.96 MTPA. As per the New EIA Notification dated 14th September 2006, the proposed project falls in **Category 'B', project or activity (2a) - (iv)** and therefore this project requires Environmental Clearance from State Level Environment Impact Assessment Authority.

'Terms of References' (ToR) presentation for the project has been done at SEAC, Chhattisgarh, and the committee has suggested various additional Terms of References (ToR) vide letter no. 22/SEIAA-CG/ EC/ Coal Wash/RGH/89/09 dated 01.05.2009.

1.2 Details of the Project

S. No.	PARTICULARS	DETAILS
1.	**Location:**	
	Village	Navapara (Tinda)
	Tehsil	Gharghora
	District	Raigarh
	State	Chhattisgarh
	Latitude	$22^{o}8'56.45"N$ - $22^{o}9'$ N
	Longitude	$83^{o}16'$ E - $83^{o}16'$ 08" E
	Toposheet No.	64 N/8
2.	**PROJECT AREA**	20.03 acres (8.10 Ha)
3.	**Green Belt Development**	6.61 acre (2.7 ha) {33% of the total area}
4.	Cost of the project	Rs 660.0 Lacs
5.	Water Requirement (KLPD)	52 m^3/day, Source: Bore wells

S. No.	PARTICULARS	DETAILS	
6.	Power Requirement	350 KW**, Source:** Chhattisgarh Power Supply Co. (i.e. Grid)	
7.	Manpower Requirement	90 Persons	
8.	**Project Location Details:**		
	Nearest City / Town	Gharghora (9.0 km, Approx. in NE)	
	Nearest Railway Station	Raigarh Railway Station (About 31 km in SSE)	
	Nearest National Highway	NH-200 (About 35 km)	
	Nearest Airport	Raipur (192 Km in South west)	
	Nearest River	**Name of the River**	**Distance (Direction)**
		Kurket	3.0 km (E)
		Mand	20.0 km (W)
9.	**Environmental Setting:**		
	Reserved Forest within 10 km. radius of the study area	**Name of RF/PF**	**Distance (Direction)**
		Bojia Reserved Forests	7.00 km (WNW)
		Marpahar Reserved Forests	8.00 km (NW)
		Suhai Reserved Forests	1.25 km (SE)
		Chhindapani Protected Forest	0.25 km (S)
		Bhengai Protected Forest	5 km (SW)
		Samruma Protected Forest	8.50 km (SE)
		Nawagarh Protected Forest	2.50 km (N)
		Kurket Protected Forest	4.75 km (NE)
	Seismic Zone	Zone II	
10.	**Micro-Meteorology (October to December, 2008):**		
	Temperature	Maximum Temperature : 45.7° C Minimum Temperature : 15.1° C	
	Relative Humidity At 8:30 hours At 17:30 hours	 35% to 45% 19% to 32%	

S. No.	PARTICULARS	DETAILS
	Average Annual Rainfall	1600 mm

1.4 RAW MATERIAL REQUIREMENT

RAW MATERIAL CONSUMPTION

Raw Material	Quantity (TPD)	Source	Distance	Mode of Transportation
Coal	2700 TPD	Chaal	13 km	Road
		Baroud	22 km	Road

1.5 PROCESS DESCRIPTION

- Raw coal up to 250 mm will be fed through hopper.
- The coal will move by a slow moving belt conveyor to a Rotary Breaker of 200 TPH capacity. The rotary breaker is of size 9 ft x 17 ft having a screen plate with 60 mm dia. and lifting shelves and deflector plates, feed chute assembly and foundation bolts.
- Semi-skilled workers will be deployed along the slow moving belt for manually picking up of shale and stone pieces.
- The residual shale and stone pieces will get segregated by the Rotary Breaker, which operates on the principle that coal being lighter and softer in nature will break and get segregated by centrifugal force of the rotary breaker and pass through the screen inside the Rotary Breaker,
- The finished product will be of 0-50 mm size.

2.0 DESCRIPTION OF THE ENVIRONMENT

2.1 STUDY PERIOD:

Summer Season – March to May, 2009

2.2 CLIMATIC CONDITION

Raipur has a sub-tropical climate; temperatures remain moderate for most of the year, apart from the summer from March to June, which can be extremely hot. Winters last from November to January and are mild, although lows can fall to 5°C.

The meteorological data from IMD station, Raipur regarding the maximum and minimum temperatures, relative humidity, wind speed and wind direction for the study period (March to May 2009) has been collected.

Climatology (During study period: March to May 2009)

i) Maximum Temperature : 45.7° C

ii) Minimum Temperature. : 15.1 °C

iii) Relative Humidity (%)

At 08.30 Hrs. : 35% - 45%

At 17.30 Hrs. : 19% - 32%

2.3 AIR QUALITY MONITORING

Ambient air quality monitoring has been carried out at 9 stations in the study area on 24 hourly basis. The average concentration for all the 9 AAQM stations of SPM ranges between 65.6 $\mu g/m^3$ to 148.3 $\mu g/m^3$, RPM range between 25.1 to 55.0 $\mu g/m^3$, SO_2 range between 6.1 to 10.2 $\mu g/m^3$ and NO_x range between 7.1 to 12.7 $\mu g/m^3$.

2.4 NOISE LEVEL MONITORING

Noise monitoring reveals that the maximum & minimum noise levels at day time were recorded as 56 Leq. dB (A) at Gharghoda Village & 42 Leq. dB (A) at Project site, respectively. The minimum & maximum noise levels at night time were found to be 38 Leq. dB at the project site & 43 Leq. dB at Pandripani Village.

2.1.4 WATER QUALITY MONITORING

Water samples were collected from 8 stations and the analysis of the samples shows that the concentration of Total Dissolved Solids (TDS) ranges between 178.92 to 205.04 mg/l, pH value varies from 7.05 to 7.32, Total Hardness varies from 90.56 to 123.45 mg/l and fluoride concentration varies from 0.10 to 0.22 mg/l in all ground water samples.

2.1.5 SOIL QUALITY MONITORING

The soil samples collected from 8 different stations and analyzed. The analysis report shows that the pH value range between 7.12 to 7.5,

organic matter ranges from 0.74% to 1.02%, soil texture is silty clay and conductivity of the soil samples ranges from 0.06 to 0.30 µmho/cm.

2.1.6 BIOLOGICAL ENVIRONMENT

FLORA: Most commonly found tree species in the area are *Acacia Arabica(*Babul), *Ziziphus mauratiana* (Ber), *Acacia catechu (*Kher), *Tectona grandis* (Sagwan), *Terminalia tomentosa (*Saja), *Emblica officialis (*Amla), *Ficus religiosa (*Pipal), *Tamarindus indica* (Imli), *Ficus bengalensis (*Bargad), *Azadirachta indica (*Neem) etc.

FAUNA: The presence of fauna depends on topography and vegetation in the area. The fauna found in the study area include Indian Hare (*Lepus nigricollis),* Indian Rat (*R. rattus),* Five striped squirrel (*Funambulus pennanti*), Common Garden Lizard (*Calotes versicolor),* Blue rock Pigeon (*Columba livia),* House crow (*Corvus splendens),* Blue bull (*Boselaphus* tragoca*melus,* Bull Frog (Rana tigrina), Common Krait (*Bungarus caeruleus),* Weaver bird (*Ploceus philippinus),* Common Babblers (*Turoides caudatus),* Little egret (*Egretta garzetta) etc.*

2.1.7 SOCIO-ECONOMIC ENVIRONMENT

The population as per 2001 Census records is 31906 (for 10 km radius buffer zone). Scheduled Caste fraction of the population of the study area (10 km) is 6.47% and Scheduled Tribe 58.60%. Percentage of literacy is 71.99% and that of workers those actually engaged in occupation is 52.41% including, 35.41% of Main workers & 16.99% of marginal workers. Rest 47.58% of the total population, are considered as non-workers.

3.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

3.1 Impact on Land

There will be no impacts on the existing land use pattern of the project site as the land selected for project site is TIKRA in nature (barren) and devoid of any major vegetation.

3.2 Air Quality

The sources of pollution in the form of dust will be generated from transport vehicles, loading and unloading of mineral, breaking of coal through rotary breaker, but proper mitigation measures will be taken (like An independent water spraying system for coal handling facility shall be provided by PCBPL).

3.3 Water Quality

- The plant will be designed to have process with **'No effluent discharge'**.
- Domestic waste water from office toilets etc. shall be disposed in soak pits through septic tank.
- The ground-water and soil sample analysis in the vicinity shows that there has been no contamination of soil or ground water.

3.4 Solid Waste

- No solid waste will be generated from the Coal Washery.

3.5 Noise Level

The general noise level generated from equipment in the proposed project would usually be below 85 Leq dB (A) in the working area and below 70 Leq dB (A) around periphery. These noise levels will be temporary in nature and its transient insignificant due to the large distances.

4.0 ENVIRONMENTAL MONITORING PROGRAMME

S.No.	Description
1	AIR Ambient air monitoring (24 hourly samples), twice a week continuously. Parameters : SPM, SO_2, NOx, RPM
2	Meteorological parameters at hourly duration simultaneously at one air monitoring station. Parameters : Wind speed, direction, Relative humidity, Temperature, Cloudiness, Rainfall etc.

3	WATER Water /effluents from various locations (surface and ground water samples) in core and buffer zone (10 km radius) Parameters : water/effluents : tested for physical, chemical and biological parameters as well as according to applicable standards
4	SOIL Once in a week at various locations in core and buffer zone.
5	NOISE Once in a week at various locations in core and buffer zone.

5.0 ADDITIONAL STUDIES

5.1 Disaster Management Plan

A detailed study including the various risks involved in operation has been done. Various hazards have been identified and separate implementation plan for Coal Beneficiation has been prepared.

6.0 PROJECT BENEFITS

Phil Coal Beneficiation Pvt. Ltd will be actively contributing to improve the socio-economic conditions of the area. Phil Coal Beneficiation Pvt. Ltd will provide employment to about 90 persons. The overall impact of the proposed project will be positive and beneficial as Phil Coal Beneficiation Pvt. Ltd is committed to continue its efforts for improving the socio-economic conditions of the area.

7.0 ENVIRONMENT MANAGEMENT PLAN

7.1 AIR POLLUTION CONTROL

- PCBPL will adopt a dry process of coal beneficiation at the proposed activities.
- An independent water spraying system for coal handling facility shall be provided by PCBPL. Water spraying system involves surface water tanks and network of spray water pipeline and headers adequate moisture will be maintained in coal handling area which will ensure that dust will not getting air borne.

- Bag house will be provided at all transfer points
- Periodic air quality monitoring will be carried out to ensure efficient working of air pollution abatement systems.
- Vehicle movement in the coal beneficiation area, shall be regulated effectively to avoid traffic congestion and workers shall be prevented from dust exposure.
- Coal stock yard (raw coal, washed coal, coal rejects and coal fines) will be housed in closed sheds in pucca platform above ground level and will be provided with wind shields / wind breaking walls. Storage size and capacity of coal stock will be decided in consultation with DGMS and Chhattisgarh Environment Conservation Board.
- Particulate matter emission will be limited to 50 mg/Nm^3

7.2 NOISE MANAGEMENT

To mitigate the high noise level, following steps should be adopted:

- Plantation along plant boundary as well as coal storage yard will help attenuate noise
- Earmuffs & Earplugs will be provided as personal protective equipment to all operators and employees working close to the machines
- All moving parts such as conveyor rollers, drum gears will be kept in good working conditions and all movable parts wherever feasible will have noise suppressant packing
- Plantation along the road side has been developed to attenuate the noise levels.

7.3 WATER MANAGEMENT

- The plant will be designed to have process with '**No effluent discharge'**.
- Rooftop Rain Water Harvesting will be practiced at plant and colony area.
- Domestic waste water from office toilets etc. shall be disposed in soak pits through septic tank.

- The waste water will be routed for greenbelt development via a ring round drain with settling tanks at transfer points to treat the waste water.

7.4 SOLID WASTE MANAGEMENT

- The plant will not generate any solid waste.
- In operation phase the coal will be separated into two products- clean coal and rejects.

7.5 GREENBELT DEVELOPMENT AND PLANTATION PROGRAMME

- The total area for the project is about 8.10 ha out of which 2.7 ha (33%) area will be developed into green belt. A thick green belt all along the roads and plant will be developed under afforestation program.
- A greenbelt of adequate width by planting the native plant species all around the roads, barren & non Industrial area, gardens etc. would be raised. Plantation along the road will attenuate noise level, arrest dust and improve the environment in surrounding. The plant species will be selected as per CPCB guidelines.