PRE-FEASIBILITY REPORT

For

Captive Limestone Mine of Chaibasa Cement Works, ACC limited.

- Proposed Limestone Capacity : 2.11 MTPA
- Mining Lease area : 115.38 ha

At

Village Rajanka, Kondwa and Dokatta,
Dist. West Singhbhum, Jharkhand.

Submitted by

ACC Limited

November -2014

(Prefeasibility Report prepared as per MOEF circular dated 29-12-2010)

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1. EXECUTIVE SUMMARY

Introduction of the project/ Background information

The ACC Limited is the oldest and one of the largest cement producers in India with annual production capacity of more than 30 Million ones per annum (MTPA).

ACC was granted a prospecting license over an area of 115.38 ha in three village viz. Rajanka, Kondwa and Dokatta in West Singbhum district of Jharkhand. The detailed exploration of the area was carried out between the year 2001-2002 when held under Prospecting Licence. Total 30 boreholes with a cumulative meterage of 1712 were drilled and the mineral reserve in the area was established.

On the basis of this exploration, ACC applied for a Mining Lease in the area over an extent of 115.38 ha.

ACC Limited has been given a letter of intent requiring submission of Mining Plan and Mine Closure Plan for the mining lease for Limestone (under major mineral) in villages Rajanka, Kondwa and Dokatta in West Singhbhum district of Jharkhand over an area of 115.38 ha vide Govt. of Jharkhand memo bearing number K. N. (W. Singhbhum) – 40/03/2204/ M, Ranchi dated 14.10.2014.

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Need of the project

The limestone being the main raw material for manufacturing of cement is always in demand in a developing country like ours. The existence of project will cater the needs of cement production, which is backbone of infrastructure development.

Demand-Supply Gap:

8 to 10 % growth of cement is taking place in the country; therefore there will be always demand of limestone in the country. The mine under reference is a captive mine of Chaibasa Cement plant.

Imports vs. Indigenous production./ Export possibilities.

It is the captive lime stone mine to the ACC Chaibasa cement works. Limestone will be supplied directly to cement plant. Therefore the mine is for indigenous production and no import is being made. There are no chances of export either.

Employment Generation.

In all 114 persons will be directly employed, out of which 22 will be in supervisory category. Besides substantial amount of indirect employment will be generated in the form of dhabas, transporters etc. which will improve the economic conditions of the area.

Project Description

Type of Project:

This is a captive limestone mine to the ACC Chaibasa cement plant situated at a distance of about 2.5 kms in the east direction from the mine.

ACC Limited has been given a letter of intent requiring submission of Mining Plan and Mine Closure Plan for the mining lease for Limestone (under major mineral) in villages Rajanka, Kondwa and Dokatta in West Singhbhum district of Jharkhand over an area of 115.38 ha.

Interlinked Projects:

This is a captive limestone mine to the ACC Chaibasa cement plant situated at a distance of 2.5 Km in the east direction from the mine.

Lease Details:

Name of owner: M/s ACC Limited.(Mr. Kuldip Kaura, nominated)

Address: ACC Limited, Chaibasa Cement Works, P.O. Jhinkpani-833215
Dist. West Singhbhum, Jharkhand.

Lease area: 115.38 ha.

Date of grant: LOI has been granted vide Govt. of Jharkhand letter no. K.N. (W.Singhbhum)-40/03/2204/M, Ranchi dated 14.10.2014

Location

The mining lease area is located near Rajanka village in Tonto tehsil of West Singhbhum district in Jharkhand. The lease is about 150 kms from Ranchi airport and 4.5 kms from Jhinkpani railway station. The mine is about 20 kms by road from Chaibasa. The mine is well connected by road network and cement plant is just 2.5 kms due NE of mine. The lease area falls in the Survey of India toposheet No.73 F/11 and can be located by the following co-ordinates:

Latitude : N 22º 24’ 35’’ to N 22º 25’ 33”

Longitude : E 85º 43’ 18” to E 85º 44’ 26”

Extent of mechanization

The mine will be worked by Mechanized Opencast Method of working. Heavy earth moving machinery in conjunction with deep hole drilling and blasting will be utilized for

the mining. The height of the bench will be kept of 8 – 12 Meters and width of the bench will be kept 30 Meters.

The blast holes of 115 mm dia will be drilled using hydraulic drills. The blast holes will be drilled in staggered pattern keeping burden of 3.0 to 4.0 Meters and spacing of 4.0 to 6.0 Meters.

Raw Materials:

It is an industry, which as a matter of fact, extracts raw material from nature. The important inputs required for excavation of desired quantity of Limestone are given hereunder.

The diesel requirement is 5 KLD. Water requirement for drinking & domestic use, sprinkling, plantation & miscellaneous use will be 2.0 KLD, 220.0 KLD,27.0 KLD, & 7.0 KLD respectively.

Geology and Reserves:

Geology:

The limestone formations of Chaibasa region belong to Kolhan series which is of Cuddapah age. The kolhan limestone is mostly thin bedded and is grey, pink, brown and white in colour. Small quartz veins traverse the limestone at places. Quality of limestone varies with depth.

The Kolhan series in the area is composed of purple shale which is underlain progressively by greenish grey/green shale, grayish brown grey high cal-carious shale, pink to maroon limestone and off white to white limestone followed by purple sandstone. The entire sequence of beds in the area under reference is covered by a thin mantle of soil with the exception of a few out crops of shale and limestone in the north western part of the area. The lithology could therefore only be presented from the workings of F block apart from the bore hole logs.

The strike of the beds is roughly NNE-SSW which coincides with the general strike of the Kolhans. The series is characterized by low dips varying from 5 to 15. The local geological sequence with in the area of 598.88 Ha.

Reserves:

Mineable reserves under UNFC category 121&122 : 24.143 million ones

Production:

Maximum annual production will be at the rate of 2.11 million tonnes per annum..

Life of the mine:

For the given reserves and the rate of production, the life of mine will be 11.49 years.

Waste Generation and Disposal:

Incidence of top soil is very meager in this area; further most of the top soil has already been removed in the past consequent to breaking of ground & used for the purpose of plantation. It is estimated that top soil generated as a result of fresh ground breaking due western side will be 0.2 to 0.3% of the waste rock i,e overburden. Soil is also found in the fractured zones & cracks which is totally not possible to be removed. Top soil & waste generation in the first five years will be to the tune of 9.418 million cu.m. Top soil generated will be stacked separately on non-mineralized ground it will be utilized for green belt development.

Waste does not contain any deleterious material likely to cause harmful impact on environmental parameters like land or water. Shale is the parent rock for soil & this is supportive to plants and can be utilized for spreading over the waste dumps. The soil will be stored on top of waste dump.

SITE ANALYSIS

Connectivity.

The mining lease area is located near Rajanka village in Tonto tehsil of West Singhbhum district in Jharkhand. The lease is about 150 kms from Ranchi airport and 4.5 kms from Jhinkpani railway station. The mine is about 20 kms by road from Chaibasa. The mine is well connected by road network and cement plant is just 2.5 kms due NE of mine. The lease area falls in the Survey of India toposheet No.73 F/11.

Land form, land use and land ownership.

All the land in Mining lease is barren private or government land. There is no forest land.

Topography

This area is flat to gently undulating topography. The maximum variation of level in the whole area is 3.5 to 4.0 m. Gentle undulations are made up of loose overburden soil cover along with quartz boulders and loose enough to doze off. Undulations are more prominent in the village area of Dokatta, whereas Kondwa and Rajanka areas are flat or with very little undulations. Elevation wise Kondwa village area occurs at lower elevation compared to Dokatta village area.

Existing land use pattern (agriculture, non-agriculture, forest, water bodies (including area under CRZ)), shortest distances from the periphery of the project to periphery of the forests,

national park, wild life sanctuary, eco sensitive areas, water bodies (distance from the HFL of the river), CRZ. In case of notified industrial area, a copy of the Gazette notification should be given)

All the land in different blocks is in barren, private or government land. There is no forest land. Further proposed mine site does not fall under the CRZ area or notified industrial area.

Existing infrastructure.

Rail connection: The nearest railway station is Jhinkpani on the Rajkharsawan- Jamda section of the SE Railway about 4.5 kms from the mine. Chakardharpur on the Rourkela-Tatanagar section of SE Railway about 50 kms from the mine is the nearby railway junction.

Road connection: There is a network of well knit good roads. The mine is connected by tar roads to Jhinkpani and Chaibasa.

At present the infrastructure available in the existing Rajanka mine of Cement Plant such as service roads, workshop building, mining office, canteen, power line, water storage tanks and Crusher etc will be utilized for this mine also. This will continue to remain till the life of the mine.

Communication facilities such as telephone, tele-fax and Internet are available in vicinity of the proposed plant site location.

Soil classification

The Soil of the lease area classified into two groups namely Rocky Soil and Red Soil. Rocky Soil remains practically uncultivated. Red Soil is spread throughout the area; It is sandy & loamy and has poor fertility.

Climatic data from the secondary sources.

Temperature
Temperature records from Chaibasa indicate that maximum temperature is 46.7ºC in month of May and minimum temperature is 4.4ºC in the month of December & January.

Rainfall: The rainfall records have been studied on the same line as temperature and it indicates that average annual rainfall is 1192 mm. About 80% of the rainfall is in between June & September.

Relative Humidity:

The morning and evening variations in relative humidity are given hereunder. In morning hours, the maximum was 83% in the month of August & minimum was 49% in the month of April. In morning hours, the maximum was 80% in the month of August & minimum was 28% in the month of April.

Wind Speed:

Winds are generally light in the morning and strong in the evenings. Strengthening in force both in the morning and evening is observed during the summer and monsoon seasons. The wind speed is generally low in the winter months. The maximum wind speed was 4.7 km/h in the month of June and minimum was 1.6 km/h in the month of December.

Social Infrastructure available.

Educational Facilities

All the villages in the study area have some education facility. The nearest College at Chaibasa is about 20 kms from the mine.

Medical Facilities:

Medical assistance is available in some form or the other in the villages of study area. There is a hospital facility at the existing cement plant.

Electric Power Availability

Electric supply from the Jharkhand State Electricity Board is available for domestic purposes. However, availability of supply of electricity through rural feeder is very erratic.

Potable Water

All the villages in the study area have water supply for domestic purposes. The wells, tanks and Hand-pumps are the dominant sources of drinking water throughout the study area.

Transport Facilities

The main mode of transportation is by road. A network of both paved (pucca in 13 villages) and unpaved (kuchcha in 56 villages) roads exists in the study area. Both are suitably interconnected. Bus facilities are available, Private jeeps and buses share the major responsibility of local transport in the study area. Some private buses are operating up to Jhinkpani and some up to ACC colony from Chaibasa, Tatanagar and Ranchi.

Post and Telegraph Facilities

The cement plant has telephone facilities. Villages on the main road have public phone

facilities.

5. Planning Brief

A mining project is much different than other industrial projects. Therefore its planning part also differs. In case of mining, the lease is granted only after an approved mining plan is submitted to the government. It is an opencast mechanized mining and the salient features are as below.

- Mechanized open cast mining will be undertaken with the help of Excavator /loader and dumper.
- Bench height will not be more than width of the benches.
- The width of ultimate width will not be less than bench height, however, working bench will have a width around 30 m
- Drilling blasting will be taken up through deep-hole 115 mm and 152 mm dia., the spacing will be kept at 5.5 -4.5 m and burden will be kept at 2.5 – 1.5 m respectively.
- Excavator and dumpers/trucks combination will be used for removal of excavated material
- The maximum strength of workers will 114 including 22 supervisory officers.. Most of the employees will be from local area.
- The waste and overburden will be utilized in backfilling the worked out pits. Soil will be placed on top which will support plantation.
- The plantation will be made within and outside the lease for improving the environment.
- The company is involved in CSR activities like running of school, hospital, sports and other cultural activities.

PROPOSED INFRASTRUCTURE

Industrial Area (Processing Area).

Infrastructures are required for mining activities with allied facilities.

Residential Area (Non Processing Area)

Residential colony for the employees already exists.

Green belt.

Green belt will be developed all along the mining lease boundary. In addition to that waste dumps and backfilled area within the mine lease will be afforestated.

Social Infrastructure.

ACC has well-defined CSR policy to carryout social development and welfare measures in the surrounding villages. Under CSR activity, ACC will initiate community development projects in the fields of health, education and environmental preservation, in the study area around the plant

Connectivity (Traffic and Transportation Road/ Rail/Metro/ Water ways etc)

The mining lease area is located near Rajanka village in Tonto tehsil of West Singhbhum district in Jharkhand. The lease is about 150 kms from Ranchi airport and 4.5 kms from Jhinkpani railway station. The mine is about 20 kms by road from Chaibasa. The mine is well connected by road network and cement plant is just 2.5 kms due NE of mine. The lease area falls in the Survey of India toposheet No.73 F/11.

Rail connection: The nearest railway station is Jhinkpani on the Rajkharshwan- Jamda section of the SE Railway about 4.5 kms from the mine. Chakradharpur, on the Rourkela-Tatanagar section of SE Railway, about 50 kms from the mine is the nearby railway junction.

Road connection: There is a network of well knit good roads. The mine is connected by tar roads to Jhinkpani and Chaibasa.

Sewerage system.

It is not significant as residential accommodation will not be provided the mining lease area.

Industrial waste management.

All the waste and Subgrade generated from F3 block will be dump in F and F2 block. The top soil will be utilized for plantation and it has proposed to stack temporarily in lease area. The details of waste and Subgrade generated in five years plan period has given below–

Year	Top soil (cu.m)	OB (cu.m)	Purple shale (cu.m)	Green shale (cu.m)	Total waste (cu.m)	Grey shale for stack (cu.m)
1st	4104	160069	525220	0.00	685289	0.00
2nd	11502.50	448597.5	3039380	268310	3756287.5	364947.64
3rd	23838.50	569701.5	1599034	6475	2175210.5	0.00

4th	**2480**	**96820**	**1112890**	**625173**	**1834883**	**760862.7**
5th	**635**	**24765**	**860296**	**81550**	**966611**	**926794.27**
Total	**42560**	**1299953**	**7136820**	**981508**	**9418281**	**2052604.61**

All the waste and Sub garage generated from F3 block will be dump in F and F2 block. The top soil will be utilized for plantation and it has proposed to stack temporarily in lease area of F3 block.

Solid waste management

Same as above

Power Requirement & Supply / Source.

The prime mover of all HEMM deployed in the mine will be diesel powered engines. No major electric power consuming establishment is envisaged. Hence no power will be required.

REHABILITATION AND RESETTLEMENT (R & R) PLAN.

Policy to be adopted (Central/ State) in respect of the project affected persons including home oustees, land oustees and landless laborers (a brief outline to be given).

Not applicable, since there is no R& R Issue is involved.

PROJECT SCHEDULE & COST ESTIMATES

Likely date of start of construction and likely date of completion (time schedule for the project to be given).

The development of mine is scheduled to be completed within 12 months from the starting date i.e. from the date of receiving all the statutory clearances for starting the mines.

Estimated project cost along with analysis in terms of economic viability of the project.

The total capital estimated is Rs. 60 Crores.

ANALYSIS OF PROPOSAL (FINAL RECOMMENDATIONS).

Financial and social benefits with special emphasis on the benefit to the local people including tribal population, if any in the area.

Based on the growing demand in the eastern states over the next 10 years, the proximity of the cement plant location to this market is an advantage with respect to reduction in freight of cement to these markets. The financial viability also shows a good rate of return from the project. The project is environmental friendly as it is using thermal power waste. Considering the above, ACC is planning to go ahead with the project, once it gets all the statutory approvals.

Employment:	Preference will be given to locals for employment based on qualification & requirement.
Medical facilities:	Existing Medical facilities will be provided for employees as well as people of nearby villages.
Educational facilities:	Existing Basic educational and vocational facilities will be provided for the children of employees as well as nearby villagers.
Infrastructure facilities:	Approach roads will be developed at par with plant roads.
Additional:	The establishment of project will facilitate additional auxiliary facilities like banking, post office & recreation facilities.

2.0 INTRODUCTION OF THE PROJECT/ BACKGROUND INFORMATION

The ACC Limited is the oldest and one of the largest cement producers in India with annual production capacity of more than 30 Million tonnes per annum (MTPA).

ACC is India's foremost manufacturer of cement and concrete. ACC's operations are spread throughout the country with 17 modern cement plants, more than 40 ready mix concrete plants, 20 sales offices and several zonal offices. It has a workforce of about 9,000 persons and a countrywide distribution network of over 9,000 dealers. The manufacturing units are backed by a technology support services centre. Since its inception in 1936, the company has been a trendsetter and important benchmark for the cement industry in respect of its production, marketing and personnel management processes. Its commitment to environment-friendliness, its high ethical standards in business dealings and its on-going efforts in community welfare programmes have won it acclaim as a responsible corporate citizen. ACC has made significant contributions to the nation building process by way of quality products, services and sharing its expertise.

ACC Limited has an existing cement clinkerisation plant of 1.20 MTPA near Jhinkpani in West Singhbhum district of Jharkhand. ACC Limited has been given a letter of intent requiring submission of Mining Plan and Mine Closure Plan for the mining lease for Limestone (under major mineral) in villages Rajanka, Kondwa and Dokatta in West Singhbhum district of Jharkhand over an area of 115.38 ha vide Govt. of Jharkhand memo bearing number K. N. (W. Singhbhum) – 40/03/2204/M, Ranchi dated 14.10.2014.

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Latitude : N 22º 24’ 35’’ to N 22º 25’ 33”

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Brief description of nature of the project:

ACC Limited proposes to setup a limestone mine based on state-of-the-art technology at the said mining lease area in West Singhbhum District of Jharkhand.

DETAILS OF LIMESTONE MINE ARE GIVEN BELOW

Topography and Drainage

The area is well connected with 75 national Highway through all weather motor-able roads, which is about 4 kms east of this applied leasehold. The nearest town is Chaibasa, which is about 15 kms from the mine. The Jhinkpani railway Station is about 4.5Kms. from the applied lease hold area. There is no forest land within the leasehold.

The area has smooth undulating terrain with altitude variation of almost 34m. The highest altitude attained is on the southern side of the lease area having RL of 340m. The lowest altitude encountered is on the north-east side of the leasehold area having 306mRL.

There is no perennial nala within the leasehold. There are few dry nala flowing in west direction and join the northern side Gumua gara. Surface runoff during rainy season follows the gradient of the terrain and passes through the seasonal nala.

Regional Geology

Regionally this area is a part of Singhbhum Shear Zone. Lithology present here are of Archean to Proterozoic age. Regional geological succession of the area as per Sarkar and Saha (1983) and Saha et al (1977) is given as follows:

REGIONAL STRATIGRAPHIC SUCCESSION

Newer Dolerite – Dykes & Sills
Mayurbhanj Granite
----- Unconformity----
Gabro-Anorthosite – Ultrabasics
-----Unconformity---
Kolhan Group
-----Unconformity----

Iron ore Super Group

Iron ore group	Jagganathpur Lava
	Dhanjori Group
	Chaibasa Formation
	Singhbhum Granite
--- Unconformity --	
Ghatsila Group	Singhbhum Granite
---- Unconformity ---	
Older metamorphic	

The area in and around Jhinkpani and Chaibasa region is mainly occupied by the rocks of Kolhan Group, Singhbhum Granite and rocks of Iron ore Group.

Local Geology

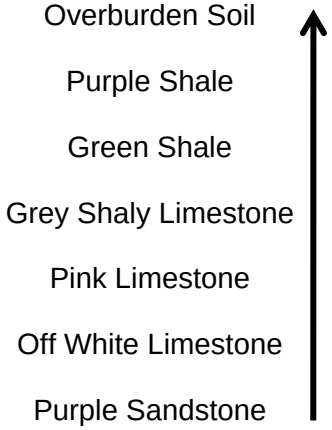
Limestone formations of the Chaibasa region belong to the Kolhan Series of Proterozoic age. The Kolhan limestone is mostly thin bedded and is grey, pink, brown and white. Small quartz veins traverse the limestone at places. Quality of limestone varies with depth, generally low-grade limestone is found immediately below the overburden, and is underlain by the high-grade limestone.

The Kolhan series in the F3 Block is composed of purple shale, which is underlain progressively by green shale, grey shale, pink limestone and off-white limestone followed

by purple sandstone. Sandstone is considered to be the basal formation in the mine area.

The entire sequence of beds in F3 block area is covered by a mantle of soil with the exception of a few outcrops of greenish shale in the north-western part and purple shale in northern part of the area. The lithology could only be confirmed from workings in the F and F2 blocks, apart from the borehole cores.

The strike of the beds is roughly NNE- SSW, which coincides with the general strike of the Kolhans. The series is generally characterised by low dips (6 to 10 degrees) to the West. Quartz also has been encountered in boreholes almost always in association with calcite. The stratigraphic sequence is as follows:



Litho units present in the area are overlain by overburden of variable thickness. Quartz also has been encountered in boreholes almost always in association with calcite.

An account of the litho units present and their typical quality is described below.

(i) Purple sandstone

Purple sandstone occurs as basement for the limestone and is encountered in almost all boreholes below the off-white limestone formation.

(ii) Off-white Limestone

This occurs at the bottom of the sequence. It is off-white, pale brownish and greenish white to white in colour, fine grained and compact in nature. Honey coloured calcite and white quartz are associated with this limestone sometimes at its contact with sandstone. Thickness of this band generally varies from 6 metres to 15 metres. The quality of the limestone is consistent.

(iii) Pink limestone:

This limestone occurs above the Off-white limestone and is erratic in thickness from as low as 2 metres to a high of 10 metres. The colour varies from pink to maroon and

displays earthy texture. This limestone is inherently lower in quality in comparison to Off-white limestone due to contamination from overlying shale.

(iv) Grey Shaly Limestone:

This stratum lies above the Pink limestone and varies in thickness from 5 metres to 15 metres. Quality of this limestone is very poor.

(v) Green Shale:

Green shale overlies the grey shale and varies in thickness from 1 metre to 10 metres. This shale is fine grained and displays a pale greenish colour.

VI) Purple Shale:

Purple shale overlies the green shale. This shale displays shades varying in colour from brown to pink/ purple and is generally weathered. This is by far a very conspicuous horizon, which occurs immediately below the overburden soul, and the thickness is generally above 20 metres. However, noticeable pinching has been observed in northern part as evident from boreholes.

VII) Overburden Soil:

Entire area is covered by overburden soil with thickness up to 7 metres, except few outcrops of Purple shale. Soil is brown in colour and is strewn with fragments. Topsoil of 1 metre thickness is top cover of overburden soil. No major structural disturbance either fault or fold is noticed in the area.

Exploratory works: Already carried out

Mining Lease area is spread in three village viz. Rajanka, Kondwa and Dokatta. The area is proved between the year 2001- 2002 when held under PL. Total 30 core boreholes were drilled. Drilling was done at a grid interval of 100 X 120 m. Core and Core-cum-Sludge (**CCS**) boreholes were drilled on alternate section lines. It was decided to drill few core-cum sludge boreholes in order to get better view of quality as soft shale partings and clay pockets give less core recovery in core boreholes.

As the deposit is westerly dipping and the area present here is at down dip side of the deposit, it involve an extensive development work. Stripping ratio will vary from 1:3 to 1:4 depending upon the area being mined.

Estimation of reserves:

Cross-sectional method has been adapted for calculation of Limestone reserve. A cross-sectional area has been calculated from section to section, which multiplied by the length of influence of ore body to get volume. The volume so determined then converted into weight (in tones) by applying ‘volume to weight’ ratio commonly referred to as ‘tonnage conversion factor’ (TCF). TCF for limestone in this area is calculated as 2.3.

For the estimation of measured resources, proved thickness of the mineral body as observed in bore hole has been considered. The proved depth is considered as full depth of drill data, where limestone is observed. G1 zone has been marked by taking 25m lateral influence from the quarry and bore holes. Further lateral influence of 25m from G1 zone has been considered for the G2 Category. The area in between G2 up to applied M. L. area has been considered under G3 category.

Categorization of Reserves:

Limestone deposit of this area can be categorized as stratiform, strata bound and tabular deposit of regular habit. Boreholes were drilled in 100 m x 120 m of grid interval. Mineral reserve is calculated considering ultimate pit slope of the working leaving 7.5m from the lease boundary and slope from statutory barrier of H.T. power line. Based on geological and feasibility assessment this mineral reserve is classified 121 and 122 (Probable mineral reserve) categories.

The total reserves of limestone under 121 and 122 categories come out to be 24.143 Million tonnes. Lithology-wise detailed break up of reserves are given in the following table:

Category	Lithology	Reserves(Mio.t)
Probable Mineral Reserves (UNFC Code:121)	Grey Shaly Limestone	9.582
	Pink Limestone	4.304
	Off White Limestone	5.069

Category	Lithology	Reserves(Mio.t)
Probable Mineral Reserves (UNFC Code:122)	Grey Shaly Limestone	0.852
	Pink Limestone	0.427
	Off White Limestone	3.909

Within the lease area, part of the reserve gets blocked mainly due to 7.5m of statutory barriers & pit slope. The ore blocked due to pit slope and statutory barriers are considered as non-mineable. In another part of the area reserve gets blocked mainly due to High tension line & pit slope. This mineral resource can be feasible after diversion of High tension line. These blocked resources, based on geological assessment are classified under 221 and 222 (Prefeasibility mineral resource) categories.

Summary of Pre- Feasibility Mineral Resource (221) & (222) of limestone calculated are given below:

PREFEASIBILITY MINERAL RESOURCE (221) IN Mio.T		
Lithology	RESOURCE BLOCKED DUE TO POWER LINE	RESOURCE BLOCKED DUE TO MINING SAFETY LIMIT FROM LEASE BOUNDARY
Grey Shaly Limestone	3.612	0.948
		1.925
Pink Limestone	1.814	1.394
		0.890
Off White Limestone	2.687	1.594
		1.365

PREFEASIBILITY MINERAL RESOURCE (222) IN MIO.T	
Lithology	RESOURCE BLOCKED DUE TO MINING SAFETY LIMIT FROM LEASE BOUNDARY
Grey Shaly Limestone	0.008
	0.030
Pink Limestone	0.008
	0.024
Off White Limestone	0.048
	0.025

Rest of the resources from G2 up to applied mining lease boundary, is classified under

333 (Inferred mineral resource) category. Summary of resources classified under 333 is given in the following table.

Category	Lithology	Reserves(Mio.t)
Inferred Mineral Resource (UNFC Code:333)	Grey Shaly Limestone	8.746
	Pink Limestone	4.486
	Off White Limestone	4.521

Summary of all the reserve and resources is given below in following table.

PRESENTATION OF MINERAL RESOURCES AS PER UNFC

CATEGORY	UNFC CODE	QUANTITY OF LIMESTONE MILLION TONNES			Grade
		Off white Limestone	Pink Limestone	Grey Shaly Limestone	
A. Total Mineral Reserve		8.978	4.731	10.434	-
Proved Mineral Reserve	(111)	-	-	-	-
Probable mineral Reserve	(121)	5.069	4.304	9.582	The grade of off white 49.10%, pink limestone is 42.30% CaO, and Grey shaley limestone +35.70% CaO.
	(122)	3.909	0.427	0.852	
B. Total Remaining Resource	-	10.240	8.616	15.269	
Feasibility mineral Resource	211	-	-	-	-
Prefeasibility mineral resource	(221)	1.594	1.394	0.948	The grade of off white 49.10%, pink limestone is 42.30% CaO, and Grey shaley limestone +35.70% CaO.
		1.365	0.890	1.925	
		2.687	1.814	3.612	
Pre-feasibility Mineral Resources	(222)	0.048	0.008	0.008	The grade of off white 49.10%, pink limestone is 42.30% CaO,
		0.025	0.024	0.030	

					and Grey shaley limestone +35.70% CaO.
Measured Mineral Resources	(331)	-	-	-	-
Indicated Mineral Resources	(332)	-	-	-	-
Inferred Mineral Resources	(333)	4.521	4.486	8.746	
Reconnaissance Mineral Resources	(334)	-	-	-	-
Total Reserves + resources		19.218	13.347	25.703	

Life of the mine:

For the given reserves and the rate of production, the life of mine will be 11.49 years.

Need for the project and its importance to the country and / or region & Demand- Supply Gap.

The cement demand in the country is going at the rate 9-10% (Compound Average Growth rate CAGR) particularly in the eastern states due to number of major infra-structural projects planned by State / Central Governments and also rapid growth of industries. The demand is likely to be higher than average for the country. Considering the location of the project site, the growing demand can be met with less transportation costs of cement. Thus, the importance of the said mine becomes critical to supply the major raw material i.e. Limestone to Chaibasa Cement Works of ACC Limited.

ACC is India's foremost manufacturer of cement and concrete. ACC's operations are spread throughout the country with 17 modern cement plants, more than 40 ready mix concrete plants, 20 sales offices, and several zonal offices. It has a workforce of about 9,000 persons and a countrywide distribution network of over 9,000 dealers. The manufacturing units are backed by a technology support services centre. Since its inception in 1936, the company has been a trendsetter and important benchmark for the cement industry in respect of its production, marketing and personnel management processes. Its commitment to environment-friendliness, its high ethical standards in business dealings and its on-going efforts in community welfare programmes have won it acclaim as a responsible corporate citizen. ACC has made

significant contributions to the nation building process by way of quality products, services and sharing its expertise.

Imports vs. Indigenous production.

India is self sufficient to meet the demands of the market with the GDP projected at 10% in the coming decades and in view of the infrastructure. Facilities going across the region, the growth rate of demand will increase to meet the expansion of new proposal are muted.

Export possibility

There are no chances of export and there is no requirement as such.

Domestic/export Markets.

The entire production is envisaged for the domestic market

Employment Generation (Direct And Indirect) due to the project.

The project will create the direct employment of 114 people in the mine. During the construction phase, skilled and unskilled people on daily average will be employed. ACC will give preference to the local peoples during construction and operation phase of the project depending upon the skill, job requirement and capability. Several other indirect employment opportunities will be created in the surrounding areas like transport business, vehicle drivers and attendants, workshops, grocery and retails, medical, etc.

Adequate number of staff, officers, managers and workmen are deployed at mine to achieve the desired objective. Employment potential is as follows.

EMPLOYMENT POTENTIAL :MANAGEMENT AND SUPERVISORY PERSONNEL

Designation	Nos.	Qualification
Manager	1	Graduate in Mining Engineering with 1st Class Manager's Certificate of Competency
Mining Engineer	1	Graduate in Mining Engineering
Asst. Manager	2	Graduate/Diploma in Mining Engineering with 1st /2nd Class Manager's Certificate of Competency
Mines Foremen	5	Diploma in Mining Engineering or Foreman's Certificate of Competency.
Mines Mate	9	Mining Mate Certificate of Competency
Mechanical Engineer	1	Graduate/Diploma in Mechanical/Automobile Engineering
Engineer	2	Diploma in Mechanical/Automobile Engineering

Geologist	1	Graduate / Post Graduate in Geology

Vocational Training Officer (1), Vocational Training Instructor (1) and Part-time Surveyor will also be provided.

For operations of HEMM, skilled and semi skilled manpower is required. And for generic various jobs, unskilled manpower will be required.

3 PROJECT DESCRIPTION:

(i) Types of project including interlinked and interdependent project, if any.

This is a captive limestone mine to the ACC Chaibasa cement plant situated at a distance of about 2.5 kms in the east direction from the mine.

ACC Limited has been given a letter of intent requiring submission of Mining Plan and Mine Closure Plan for the mining lease for Limestone (under major mineral) in villages Rajanka, Kondwa and Dokatta in West Singhbhum district of Jharkhand over an area of 115.38 ha.

(ii) Locations (map showing general location, specific location, and project boundary & project site layout with coordinates)

The mining lease area is located near Rajanka village in Tonto tehsil of West Singhbhum district in Jharkhand. The lease is about 150 kms from Ranchi airport and 4.5 kms from Jhinkpani railway station. The mine is about 20 kms by road from Chaibasa. The mine is well connected by road network and cement plant is just 2.5 kms due NE of mine. The lease area falls in the Survey of India toposheet No.73 F/11 and can be located by the following co-ordinates:

Latitude : N 22º 24’ 35’’ to N 22º 25’ 33”

Longitude : E 85º 43’ 18” to E 85º 44’ 26”

Location map is enclosed as Annexure 1.

(iii) Details of alternate sites considered and the basis of selecting the proposed site, particularly the environmental considerations gone into should be highlighted.

The mining project is site specific project as it is related to occurrence of limestone in

the mother earth. Hence no alternative sites were studied for the purpose.

(iv) Size or magnitude of operation.

Working for limestone is done by adopting mechanized opencast method. It is proposed to produce a maximum of 2.11 million TPA from the mining lease in accordance with approved mining plan including mine closure plan by IBM.

(v) Project description with process details (a schematic diagram/flow chart showing the project layout, components of the project etc. should be given)

The mine will be worked by Mechanized Opencast Method of working. Heavy earth moving machinery in conjunction with deep hole drilling and blasting will be utilized for the mining. The height of the bench will be kept of 8 – 12 Meters and width of the bench will be kept 30 Meters.

The blast holes of 115 mm dia will be drilled using hydraulic drills. The blast holes will be drilled in staggered pattern keeping burden of 3.0 to 4.0 Meters and spacing of 4.0 to 6.0 Meters.

The blast holes will be charged with ANFO/slurry explosives/SME along with prime charges. Almost 30 % of blasthole depth will be stemmed for effective blasting and to reduce noise and fly rock. The explosives will be blasted by using non – electric detonators (NONEL). This enables bottom initiation in the holes and with this technique each hole is blasted separately by providing delay in each hole. The bottom initiation and delay in each hole not only control the throw of the blast but also reduce the ground vibration and noise pollution.

The shovel dumper combination will be used for excavation of the limestone. Shovels of 6.5 m3 and 4.0 m3 will be deployed in combination with 60/50/40 T class dumpers. The blasted stone will be excavated using these shovels and transported through these dumpers. All the benches and roads will be sloped properly to maintain the safety of this equipment.

For removal of overburden soil, suitable bench will be formed and excavators with dumpers will be deployed for development. The overburden soil thus excavated will be dumped and stacked as waste dump. For scrapping of top soil, dozer in combination with shovel / loader will be used.

To achieve the desired production and productivity, adequate number of staff, officers, managers and workmen (skilled and unskilled) will be deployed.

The mine working will be highly mechanized. For operations like drilling, excavating and hauling, heavy earth moving machineries viz. drill machine, hydraulic excavator and dumpers will be used. Hydraulic drill machine will be used for drilling 115 mm dia blast holes. Hydraulic Excavators will be used for loading of blasted material. The dumpers of 40/50/60 tons payload will be used for transporting of overburden and limestone to dump yard and crusher location respectively. Dozer will be used for levelling & compacting of overburden dump as well as face preparation and road maintenance.

MACHINES REQUIRED FOR 7000 TPD LIMESTONE

SL. NO.	TYPE OF MACHINE	PROPOSED UNITS	CAPACITY/ SIZE	MOTIVE POWER
1	HYD. SHOVEL	1	6.5 CUBIC M	DIESEL ENGINE
2	HYD. SHOVEL	4	4.0 CUBIC M	DIESEL ENGINE
3	HYD. BACK HOE	1	3.5 CUBIC M	DIESEL ENGINE
4	ROCK BREAKER	1	40 T CLASS	DIESEL ENGINE
5	DUMPER (BEML)	6	45.5 T	DIESEL ENGINE
6	DUMPER (BEML)	3	36.5 T	DIESEL ENGINE
7	DUMPER (KOMATSU)	2	55 T	DIESEL ENGINE
8	DOZER(BEML)	2	320 HP	DIESEL ENGINE
9	DOZER(CAT)	1	305 HP	DIESEL ENGINE
10	DRILL (ING. RAND ICM 260 & CM 260)	2	100 MM	DIESEL ENGINE
11	DRILL (ING. RAND)	1	150 MM	DIESEL ENGINE
12	DRILL (ATLAS COPCO,D-60)	1	115 MM	DIESEL ENGINE
13	MAINTENANCE VAN (TELCO)	1	10 TONS	DIESEL ENGINE
14	WATER TANKER(TELCO)	1	10000 LTS	DIESEL ENGINE
15	TRUCK BOX TYPE (BR-18-8005)(TELCO)	1	10 TONS	DIESEL ENGINE
16	EXPLOSIVE VAN(TELCO)	1	4 TONS	DIESEL ENGINE
17	DIESEL TANKER(TELCO)	1	4 KL	DIESEL ENGINE
18	EXPLOSIVE VAN(TELCO)	1	7 TONS	DIESEL ENGINE
19	TATA PICKUP MOBILE SERVICE VAN	1	5 SEATER	DIESEL ENGINE
20	WHEEL LOADER(HINDUSTAN 2071)	1	5 CUBIC M	DIESEL ENGINE

The operation cost for delivering stone to crusher is detailed below –

Sl.No.	Item	Cost(Rs)/Tonne
1	Development Cost(Overburden handling)	30.00
2	Drilling Cost	15.00
3	Blasting Cost	18.00
4	Dozing Cost	5.00
5	Loading Cost	30.00
6	Transportation Cost from Lease to Plant	32.00

7	Mining Concessions and Royalties/Cess	81.00
	Total	**211.00**

(vi) Raw material required along with estimated quantity, likely source, marketing area of final product, mode of transport of raw material and finished product.

The materials required for the mine will be explosives for blasting and diesel for internal vehicular movement. ANFO with Cast Booster/ Cartridge Slurry or Emulsion Explosive is to be used. Column charge is ANFO consisting 5% fuel oil mixed with prilled ammonium nitrate. Booster explosive is available in 2.78 kg cartridges. Nonel tubes and electric detonators are other explosive materials that are required for blasting. The existing magazine of Rajanka mine having following capacity will be utilized for this mine also.

SL. NO.	**EXPLOSIVES**	**CLASS**	**DIV.**	**MAGAZINE CAPACITY**
1.	NITRATE MIXTURE	2	0	3629 KG
2.	SAFETY FUSE	6	1	30000 Mtrs
3.	DETONATING FUSE	6	2	75000 Mtrs
4.	DETONATORS	6	3	20000 Nos

(vii) Resources optimization/ recycling and reuse envisaged in the project, if any, should be brief outlined.

There is hardly anything which is wasted in mine except the overburden. The overburden will be handled and stacked in safe and scientific manner at designated place as proposed in the mining plan.

The drilling bits and all the used spare parts also find a path for recycling. Used oil will be stored as per prescribed norms and will be sold to authorized vendor. Pit water is conserved in a reservoir from where it is used for sprinkling and gardening purposes.

(viii) Availability of water its sources, Energy /power requirement and sources should be given,

Water

Approx 220 KLD of water shall be required for sprinkling operations during peak season and about 2.0 KLD will be used for drinking & domestic purpose, 27 KLD will

be utilized for green belt. Approximately 7.0 KLD of water will be used for miscellaneous purposes.

The water requirement shall be fulfilled through Water accumulated in Rajanka mine.

Power

Total diesel requirement is 5.0 KLD & total electricity requirement is 7,800,000 KWh/year, which is supplied by captive power plant.

(ix) Quantity of wastes to generated (liquid and solid) and scheme for their management/disposal.)

All the waste and Subgrade generated from F3 block will be dump in F and F2 block. The top soil will be utilized for plantation and it is proposed to stack temporarily in lease area. The details of waste and Subgrade generated in five years plan period has given below-

Year	Limestone (Tones)	Top soil (cu.m)	OB (cu.m)	Purple shale (cu.m)	Green shale (cu.m)	Total waste (cu.m)	Grey shale for stack (cu.m)
1st	0.00	4104	160069	525220	0.00	685289	0.00
2nd	1000000	11502.5	448597.5	3039380	268310	3756287.5	364947.64
3rd	1500000	23838.5	569701.5	1599034	6475	2175210.5	0.00
4th	2100000	2480	96820	1112890	625173	1834883	760862.7
5th	2100000	635	24765	860296	81550	966611	926794.27
Total	6700000	42560	1299953	7136820	981508	9418281	2052604.61

(x) Schematic representations of the feasibility which give information of EIA purpose.

Detailed schematic representations of the feasibility covering the purpose of EIA will be given in the Environmental Impact Assessment report.

4. SITE ANALYSIS

(i) Connectivity.

The mining lease area is located near Rajanka village in Tonto tehsil of West Singhbhum district in Jharkhand. The lease is about 150 kms from Ranchi airport and 4.5 kms from Jhinkpani railway station. The mine is about 20 kms by road from Chaibasa. The mine is well connected by road network and cement plant is just 2.5 kms due NE of mine. The lease area falls in the Survey of India toposheet No.73 F/11.

(ii) Land form, land use and land ownership.

All the land in Mining lease is barren private or government land. There is no forest land.

(iii) Topography (along with map)

This area is flat to gently undulating topography. The maximum variation of level in the whole area is 3.5 to 4.0 m. Gentle undulations are made up of loose overburden soil cover along with quartz boulders and loose enough to doze off. Undulations are more prominent in the village area of Dokatta, whereas Kondwa and Rajanka areas are flat or with very little undulations. Elevation wise Kondwa village area occurs at lower elevation compared to Dokatta village area.

(iv) Existing land use pattern (agriculture, non-agriculture, forest, water bodies (including area under CRZ)), shortest distances from the periphery of the project to periphery of the forests, national park, wild life sanctuary, eco sensitive areas, water bodies (distance from the HFL of the river), CRZ. In case of notified industrial area, a copy of the Gazette notification should be given)

All the land in different blocks is in barren, private or government land. There is no forest land. Further proposed mine site does not fall under the CRZ area or notified industrial area.

(v) Existing infrastructure.

Rail connection: The nearest railway station is Jhinkpani on the Rajkharsawan-Jamda section of the SE Railway about 4.5 kms from the mine. Chakardharpur on the Rourkela-Tatanagar section of SE Railway about 50 kms from the mine is the nearby railway junction.

Road connection: There is a network of well knit good roads. The mine is connected by tar roads to Jhinkpani and Chaibasa.

At present the infrastructure available in the existing Rajanka mine of Cement Plant

such as service roads, workshop building, mining office, canteen, power line, water storage tanks and Crusher etc will be utilized for this mine also. This will continue to remain till the life of the mine.

Communication facilities such as telephone, tele-fax and Internet are available in vicinity of the proposed plant site location.

(vi) Soil classification

The Soil of the lease area classified into two groups namely Rocky Soil and Red Soil. Rocky Soil remains practically uncultivated. Red Soil is spread throughout the area; It is sandy & loamy and has poor fertility.

(vii) Climatic data from the secondary sources.

Temperature

Temperature records from Chaibasa indicate that maximum temperature is 46.7ºC in month of May and minimum temperature is 4.4ºC in the month of December & January.

Rainfall: The rainfall records have been studied on the same line as temperature and it indicates that average annual rainfall is 1192 mm. About 80% of the rainfall is in between June & September.

Relative Humidity:

The morning and evening variations in relative humidity are given hereunder. In morning hours, the maximum was 83% in the month of August & minimum was 49% in the month of April. In morning hours, the maximum was 80% in the month of August & minimum was 28% in the month of April.

Wind Speed:

Winds are generally light in the morning and strong in the evenings. Strengthening in force both in the morning and evening is observed during the summer and monsoon seasons. The wind speed is generally low in the winter months. The maximum wind speed was 4.7 km/h in the month of June and minimum was 1.6 km/h in the month of December.

(viii) Social Infrastructure available.

Educational Facilities

All the villages in the study area have some education facility. The nearest College at Chaibasa is about 20 kms from the mine.

Medical Facilities:

Medical assistance is available in some form or the other in the villages of study area.

There is a hospital facility at the existing cement plant.

Electric Power Availability

Electric supply from the Jharkhand State Electricity Board is available for domestic purposes. However, availability of supply of electricity through rural feeder is very erratic.

Potable Water

All the villages in the study area have water supply for domestic purposes. The wells, tanks and Hand-pumps are the dominant sources of drinking water throughout the study area.

Transport Facilities

The main mode of transportation is by road. A network of both paved (pucca in 13 villages) and unpaved (kuchcha in 56 villages) roads exists in the study area. Both are suitably interconnected. Bus facilities are available, Private jeeps and buses share the major responsibility of local transport in the study area. Some private buses are operating up to Jhinkpani and some up to ACC colony from Chaibasa, Tatanagar and Ranchi.

Post and Telegraph Facilities

The cement plant has telephone facilities. Villages on the main road have public phone facilities.

5. PLANNING BRIEF.

(i) Planning Concept (types of industries, facilities, transportation etc) Town and Country planning/Development authority Classification

A mining project is much different than other industrial projects. Therefore its planning part also differs. In case of mining, the lease is granted only after an approved mining plan is submitted to the government. The proposed project is to set up a limestone mine captive to existing cement plant of ACC. ACC Limited has been given a letter of intent requiring submission of Mining Plan and Mine Closure Plan for the mining lease for Limestone (under major mineral) in villages Rajanka, Kondwa and Dokatta in West Singhbhum district of Jharkhand over an area of 115.38 ha.

As the project is envisaged to employ indirect employees during construction and operation phase and direct employees so the basic infrastructure facilities like medical facilities, schools, play ground, drinking facilities, bank, post offices etc. will be developed and the same can also be used by nearby villages.

(ii) Population projection.

The proposed project is a captive limestone mine to the existing cement plant of ACC limited. Mine will be highly mechanized open cast project and will employ unskilled, semi skilled and skilled workers majority of whom will be locally employed from nearby villages. The project will create the direct employment of 114 people in the mine. During the construction phase, skilled and unskilled people on daily average will be employed. ACC will give preference to the local people during development phase of the mine depending upon the skill, job requirement and capability. Several other indirect employment opportunities will be created in the surrounding areas such as transport business, vehicle drivers and attendants, workshops, grocery and retails, medical, etc.

Moreover, adequate number of supervisory staff, officers, and managers will also be deployed at mine to achieve the desired objective.

(iii) Land use planning (breakup along with green belt etc)

Land use pattern in five year plan period

Item	Area in hectares
Mining	**47.07**
Top soil	**1.00**
Plantation(7.5m safety zone)	**1.25**
Mine road	**0.18**
Total	**49.50**

(iv) Assessment of Infrastructure Demand (physical & social).

Adequate physical and social facilities are available in this area.

(v) Amenities/ Facilities.

All infrastructure facilities such as education, health facilities and other social facilities are adequate which makes the region adequate in amenities.

6 PROPOSED INFRASTRUCTURE

(i) Industrial Area (Processing Area).

Infrastructures are required for mining activities with allied facilities.

(ii) Residential Area (Non Processing Area)

Residential colony for the employees already exists.

(iii) Green belt.

Green belt will be developed all along the mining lease boundary. In addition to that waste dumps and backfilled area within the mine lease will be afforestated.

(iv) Social Infrastructure.

ACC has well-defined CSR policy to carryout social development and welfare measures in the surrounding villages. Under CSR activity, ACC will initiate community development projects in the fields of health, education and environmental preservation, in the study area around the plant

(v) Connectivity (Traffic and Transportation Road/ Rail/Metro/ Water ways etc)

The mining lease area is located near Rajanka village in Tonto tehsil of West Singhbhum district in Jharkhand. The lease is about 150 kms from Ranchi airport and 4.5 kms from Jhinkpani railway station. The mine is about 20 kms by road from Chaibasa. The mine is well connected by road network and cement plant is just 2.5 kms due NE of mine. The lease area falls in the Survey of India toposheet No.73 F/11.

Rail connection: The nearest railway station is Jhinkpani on the Rajkharshwan-Jamda section of the SE Railway about 4.5 kms from the mine. Chakradharpur, on the Rourkela-Tatanagar section of SE Railway, about 50 kms from the mine is the nearby railway junction.

Road connection: There is a network of well knit good roads. The mine is connected by tar roads to Jhinkpani and Chaibasa.

(vii) Sewerage system.

It is not significant as residential accommodation will not be provided the mining lease area.

(viii) Industrial waste management.

All the waste and Subgrade generated from F3 block will be dump in F and F2 block. The top soil will be utilized for plantation and it has proposed to stack temporarily in lease area. The details of waste and Subgrade generated in five years plan period has given below–

Year	Top soil (cu.m)	OB (cu.m)	Purple shale (cu.m)	Green shale (cu.m)	Total waste (cu.m)	Grey shale for stack (cu.m)
1st	4104	160069	525220	0.00	685289	0.00
2nd	11502.50	448597.5	3039380	268310	3756287.5	364947.64
3rd	23838.50	569701.5	1599034	6475	2175210.5	0.00
4th	2480	96820	1112890	625173	1834883	760862.7
5th	635	24765	860296	81550	966611	926794.27
Total	42560	1299953	7136820	981508	9418281	2052604.61

All the waste and Sub garage generated from F3 block will be dump in F and F2 block. The top soil will be utilized for plantation and it has proposed to stack temporarily in lease area of F3 block.

(ix) Solid waste management

Same as above

(x) Power Requirement & Supply / Source.

The prime mover of all HEMM deployed in the mine will be diesel powered engines. No major electric power consuming establishment is envisaged. Hence no power will be required.

7. REHABILITATION AND RESETTLEMENT (R & R) PLAN.

(i) Policy to be adopted (Central/ State) in respect of the project affected persons including home oustees, land oustees and landless laborers (a brief outline to be given).

Not applicable, since there is no R& R Issue is involved.

8. PROJECT SCHEDULE & COST ESTIMATES

(i) Likely date of start of construction and likely date of completion (time schedule for the project to be given).

The development of mine is scheduled to be completed within 12 months from the starting date i.e. from the date of receiving all the statutory clearances for starting the mines.

(ii) Estimated project cost along with analysis in terms of economic viability of the project.

The total capital estimated is Rs. 60 Crores.

9. ANALYSIS OF PROPOSAL (FINAL RECOMMENDATIONS).

(i) Financial and social benefits with special emphasis on the benefit to the local people including tribal population, if any in the area.

Based on the growing demand in the eastern states over the next 10 years, the proximity of the cement plant location to this market is an advantage with respect to reduction in freight of cement to these markets. The financial viability also shows a good rate of return from the project. The project is environmental friendly as it is using thermal power waste. Considering the above, ACC is planning to go ahead with the project, once it gets all the statutory approvals.

Employment:	Preference will be given to locals for employment based on qualification & requirement.
Medical facilities:	Existing Medical facilities will be provided for employees as well as people of nearby villages.
Educational facilities:	Existing Basic educational and vocational facilities will be provided for the children of employees as well as nearby villagers.
Infrastructure facilities:	Approach roads will be developed at par with plant roads.
Additional:	The establishment of project will facilitate additional auxiliary facilities like banking, post office & recreation facilities.