AMIL MINING INDIA PVT. LTD.

FINAL REPORT OF R.P. NO.80 AREA 900.40 SQ. KM. IN NAWRANGPUR & KALAHANDI DISTRICT OF ORISSA FROM 26.09.2006 TO 25.09.2009.

1. Introduction :

Regional Geological investigation and exploration work was undertaken in the above RP area from 26.09.2006 to 25.09.2009. The objective being to locate diamond bearing kimberlite/ lamproite rocks in the survey area, exploration was carried out in shape of gravel/ loam sample collection, study of geology structural and other geomorphic signatures. During the course of the study 66 nos of gravel/loam samples were collected over the entire area and were subject to microscopic study to find the pressure of DIM grains.

The area featured in Survey of India Topo Sheet no. 65I/10,11,12,14 & 15. Which form the eastern contact of the Chhattisgarh in the west & granite complex in the east as the area close to the Raipur pipe rocks in the west chances of finding the KL rocks is some what possible.

1.1. Location :

The RP area under report is covering northern and southern parts of Nabarangpur town, is featured in the Toposheet no. 65 I/10, 11,12,13,14,15 & 16. Major part of the area comes under the administrative control of Nabarangpur district.

1.2. Accessibility :

The area can be easily accessible from the District Hqs. Of Nawrrangpur, NH 43 passes through the area. Interior areas are connected by metalled roads. However movement during rainy season is difficult due to bad road conditions.

1.3. Geomorphology :

The area is composed of older metamorphic rocks overlain by proterozoic rocks imposing a very gentle undulating terrain. It is showing rolling topography having elevations ranging between 450m to 1008m. above MSL. The north eastern and south eastern parts are covered by hill ranges. The rest area is in the valley part.

1.4. Climate and Drainage :

The drainage pattern is controlled by River Indravati. The drainage pattern is dendritic with moderate density and remains dry during summer and part of winter season.

II. Geology

2.0. Regional Geology :

The area under report forms an integral part of the eastern Bhandara craton of Archaeon age and is lying in the fringe region of the cratonic block. Archaean older metamorphites and metasedimentaries of Proterozoic age constitute the lithological parts. Besides younger granites are encountered too. Most of the area in the valley is covered by thick soil/ alluvium cover. The northern and southern part show the contact of older metamorphites with the proterozoics. The geological succession of the lithounits encountered in the area is as follows.

Recent	Soil/ Alluvium
Sub-Recent	Laterite
Proterozoics	Metasedimentaries (Purple shale)
Archaean (Older Metamorphites)	Quartz vein Pegmatite Younger granite. Basic Intrusive & Dolerite dykes Granite Gneiss and Porphyritic Granite Gneiss .

---------- Base not seen ----------

The area is dominated by varieties of granites and quarzites. The proterozoic is represented by purple shale and quartzites. Younger grey and small pockets of pink granites are after seen within veins of pegmatite and quartz veins.

2.1. Structure & Metamorphism :

Two sets of lineaments dominate the area with the trend of NE-SW and NW-SE. Three sets of joints/ fracture planes are observed in the older metamorphites along NE-SW, N-S and NW-SE directions. Regional dynamo-thermal metamorphism has affected the area .

III. Exploration :

3.0 Exploration :

Exploration activities include study of the regional geology, structural features, study of contact zones and collection of gravel/ loam samples on regional as well as closed spaced grids from the 1st and 2nd order stream in the area to find out the presence of +ve DIM grains.

Based on the analysis results of soil samples were +ve mineralogical sites were found, close spaced sampling were taken up in last phase of operation. Basically were bars, break in slopes, stream meanders were chosen as the best trap sites.

Samples confirming to size (-) 1.5 mm were collected (40 kg) for microscopic studies to detect occurrence of DIM grains and to delineate the +ve area for further exploration work.

3.1. Work Done :

The work under taken in the above area is as follows:

The following is the statement showing total quantum of exploration inputs during the period under review.

(i)	Regional geological studies in 1:50000	
(ii)	Study of structural & contact zones	
(iii)	No of of gravel/ Loam samples collected	66
(iv)	Cross-Traverse studies over	20 kms.
(v)	Ground check of +ve areas	20 nos
(vi)	Gravel/ Loam sampling from 1st and 2nd order stream and close spaced sampling from areas found to contain +ve DIM grains	44 nos.

Although, few areas were seen to shed +ve DIM grain, ground charges in the vesinity of the areas could not establish the presence of the in site KL formations. Seems to be buried under thic alluvium cover. Geophysical survey like electromagnetic studies and drilling may reveal the presence of the KL bodies.