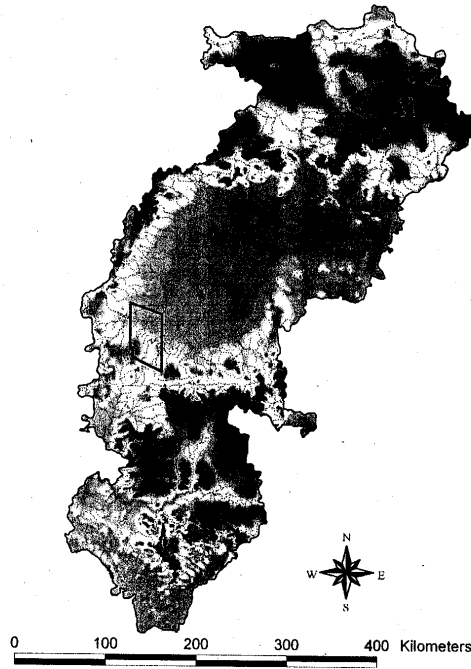


**Closing Report on Reconnaissance Permit
F-2-26/2002/M, Chhattisgarh**

**Report for the period
14/01/03 to 13/01/06**

Chhattisgarh
5



In terms of the relevant legislation, the information reported in this document is to be kept strictly confidential by the Chhattisgarh State Government for a period of two years from the date of expiry of the license.



DE BEERS INDIA PRIVATE LIMITED

56, Nandidurga Road, Benson Town, Karnataka. Bangalore - 560046

**Closing Report on Reconnaissance Permit
F - 2 - 26/2002/M, Chhattisgarh**

**Report for the period
14/01/2003 to 13/01/2006**

In terms of **Rule 7(1)(viii)**, MCR, 1960, the information reported in this document is to be kept strictly confidential by the Chhattisgarh state government for a period of two years from the date of expiry of the license.

1. Reconnaissance Permit (RP) Status

The initial RP area of 1975 sq km was executed at Raipur on 14th January 2003. As per rule 7(i) (a) of MCR 1960, 50% of the initial area was reduced to retain 987.5 sq km on 13th January 2005 (Map 1). Another 472.5 sq km area was relinquished in the second phase on 7th May 2005 to retain 515 sq km (Map 1). The whole of RP was relinquished on 13th January 2006. This report summarizes the exploration work carried out in this RP during the entire period from 14th January 2003 to 13th January 2006.

2. Geology of the license area

The lithological units exposed in the Reconnaissance Permit (RP) area are granite and granite gneisses, metavolcanics with BIF (Banded Iron Formation) and ultramafics and Upper to Middle Proterozoic Chhattisgarh Supergroup sediments (Map 2). The southern and south-eastern part of the RP area consists of granite, gneisses, and migmatites, the south-western RP area is mostly underlain by Bailadila and Dongargarh Group rocks and the central and northern part of the RP area is occupied with the Chandrapur and Raipur Group rocks of the Chhattisgarh Supergroup.

There are only a few exposures of granite and granite gneisses in the RP area intruded by basic dykes trending NW-SE to NNW-SSE. Most of the granitic country is covered under a thick residual soil.

The Bailadila Iron Formation is prominent in the Dalli Rajhara area which is being mined by the Steel Authority of India Limited. Felsic and mafic metavolcanics are also prominently exposed in the area.

The granites and greenstones are overlain by sandstones and flaggy limestones and shales of the Chhattisgarh Supergroup with an unconformity represented by a thin impersistent conglomerate. The conglomerate is dominated by angular to sub angular vein quartz with a ferruginous matrix. Although it is correlated with Banaganapalle conglomerate of the Kurnool Supergroup in Andhra Pradesh, the impersistent conglomerate here is not known for diamonds and there is no literature available about any work carried out on these conglomerates.



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Most of the license area irrespective of the underlying lithological unit is covered with residual clays containing scattered chert pebbles. These flat and clay rich areas are covered with forest and paddy fields.

The Chhattisgarh Supergroup sediments are horizontal to sub-horizontal. However, local disturbance is noticed at a few locations and may be due to minor faults. No intrusive rocks into the sediments could be seen in the license area while carrying out sampling in non-forest areas.

3. Geomorphology of the area

The area consists of three types of terrain reflecting the rock types (Map 3). The sample density varies depending upon the geomorphology of the area.

- 1) Terrain underlain by Chhattisgarh sediments in the northern part of the area is poorly drained with gentle slopes. Poor recovery of indicator minerals is consistent with the quality of the trap sites in this area.
- 2) Terrain underlain by metavolcanics in the southern part of the area is well drained with moderate to gentle slopes. These samples are rich in heavy minerals and are consistent with the quality of trap sites reported.
- 3) The granitic terrain in the southern part of the area is covered with thick residual soil and is poorly drained.

4. Activity during the period 14/01/2003 to 13/01/2006

Exploration activity was conducted from a field camp established in the town of Balod.

4.1 Reconnaissance Sampling

Reconnaissance stream sediment and loam sampling was completed with a total of 448 stream and 94 soil samples being collected with an average sample density of 1 sample per 3 km². All the samples have been processed, analysed and results received. Sample locations are shown on the attached map (Map 4) and sample details are recorded in Table 1.

Stream samples comprise 75 litres of material screened through 10 mm mesh from a natural heavy mineral trap sites. This - 10 mm fraction material is further screened to 2 mm. Loam samples comprise 30 litres of - 10mm material and for further processing all the samples were transported to the De Beers India treatment plant in Peenya, Bangalore.

All samples received from the field passed through a series of treatment processes to produce heavy mineral concentrates at De Beers India Sample Treatment Center (PSTC). The raw sample collected from the field was wet screened to -1 to +0.5 mm where the sample weight was reduced by up to 80%. The screened fraction from wet screening was then sent to a dense media separator to reduce sample weight by ~95% which was followed by acidization where samples were boiled with 20% sulphuric acid and 80% water for one hour to remove the surface coatings of the concentrate making mineral identification possible. After acidization, the samples were sent for ultrasonic cleaning, to



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get a clean concentrate which was sent for either low or high intensity magnetic separation based on the nature of the sample. Large samples containing a significant proportion of minerals denser than 2.95 gm/mL were then passed through lithium hetero- polytungstates mixed with water at a density of 3.1 gm/cc. The sinks and floats are separated and the sink portion dried and sent to Bangalore Mineralogical Laboratory (BML) to recover kimberlitic indicator minerals.

The concentrate received from PSTC was subjected to microscopic examination at BML to recover kimberlitic indicator minerals. Suspected kimberlitic grains were then sent to De Beers Heavy Mineral Laboratory in Melbourne for detailed classification and then on to De Beers Geoscience Lab in South Africa for electron micro-probe analysis.

4.1.1 Reconnaissance Sampling Results

Results were received for all reconnaissance samples in the RP area (Map 5 and Table 2), and 261 samples reported positive with respect to kimberlitic indicator minerals. Totals of 6784 spinels, 8 garnets, and 33 ilmenites were reported. No clinopyroxenes were recovered. One micro-diamond was recovered from reconnaissance stream sample (Table 3).

4.2 Follow up Sampling

Based on the results of reconnaissance sampling, follow up sampling was done in the anomalous areas:

A total of 13 stream samples were collected in the first phase follow up stage. These samples comprise 75 litres of unscreened material, collected from natural heavy mineral trapsites and field screened to -2.0mm. These samples have been processed, analyzed and results received.

A total of 894 loam and 1 stream samples were collected in the second phase of follow up, soil samples comprise 30 litres of unscreened material, collected from deflation surfaces. These samples have been processed, analyzed and results received.

Sample localities and information are shown in Map 7 and recorded in Table 5 and Table 7.

4.2.1 Follow up Sampling Results

Results for all the follow up I samples in the RP area were received (Map 8 and Table 6) and 13 samples reported positive with respect to kimberlitic indicator minerals. Only spinel grains were reported in the follow up samples. No other indicator minerals were recovered.

Results for all the follow up II sample in the RP area were received (Map 9 and Table 8) and 41 samples reported positive with respect to kimberlitic indicator minerals. Spinel is the dominant indicator minerals reported besides rare garnets, clinopyroxenes and ilmenites.



4.2.2 Rock Sampling

A total of 7 rock samples were collected as a part of follow up sampling phase (Map 6). Six rock samples were collected from AHS anomaly area and one conglomerate rock sample was collected from Chandrapura clastic sequence, exposed extensively in the area (Table 4). The petrography examinations confirm them as ultramafics rocks with metamorphic origin.

4.3 Mineral Chemistry

Scanning Electron Microprobe analysis was done on spinel (10641 analyses), garnet (225 analyses), ilmenite (391 analyses) and clinopyroxene (28).

The spinel chemistries indicate the presence of a dominant non-kimberlitic population with a subordinate mantle-derived population possibly indicating the presence of kimberlites. The non-kimberlitic population is most abundant in the west of the RP, and may derive from the volcanics of Nandgaon and Khairagarh Groups exposed to the west.

The mantle-derived population extends into the diamond inclusion and diamond intergrowth regions of standard plots (Figure 2 and 3), indicating that the source kimberlites may be of high interest. The garnet analyses indicate the presence of high interest G10 garnet grains and dominant population of non-peridotitic (but possibly eclogitic) grains (Figure 1).

The ilmenites and clinopyroxenes appear to derive from unrelated sources (Figure 4 to 8).

4.4 Airborne Multispectral Scanner (AMS) Survey

An airborne survey utilising De Beers's proprietary hyperspectral scanner technology was conducted over the RP area in April 2004. The system works by measuring reflectance of narrow wavelength bands of sunlight reflected from the Earth's surface. Different minerals (as well as other materials) absorb different wavelengths of light to varying degrees. The AMS system is sensitive enough to actually distinguish some specific types of minerals by the absorption of certain wavelengths of light detected. In diamond exploration, the system is configured to look for the presence of magnesium-rich clay minerals, derived from the weathering of kimberlites and other related ultramafic rocks.

The AMS equipment was fitted onto a P68C (registration VT-TAH) aircraft chartered from Taneja Aerospace and Aviation Limited, 1010, 10th Floor, Prestige Meridian - 1, 29 M.G Road, Bangalore 560 001. The surveying was conducted from an altitude of 9,500 ft (2,896 m) along flight lines 2 km apart.

A false colour composite image of RP is shown in Map 10.

A total of 76 anomalies were selected as areas comprising Mg-rich clays with the potential to be kimberlites in this RP area (Map 11). Follow up of the survey involved field visits to all the anomalies to check the causative lithological units (Table 8). Pits (~2m) were made in few occasions over the anomaly area to confirm the causative body beneath the causative surface soil. Samples collected



from the anomaly area were analyzed by PIMA (Portable Infra-Red Mineral Analyzer) to confirm that the lithology identified on the ground corresponded to the anomalous Mg-rich absorption feature identified by the aerial survey. PIMA analysis was carried out in the field camp.

75 anomalies were resolved with confirmed causative bodies. Only one anomaly is unresolved, requires drilling to confirm the causative body beneath the soil when it is accessible in dry season.

No kimberlites were discovered from this survey.

All the plots of AMS anomalies followed up are attached as Appendix 1.

4.5 Airborne Geophysical Survey

A TEMPEST Survey was flown by Fugro Airborne Surveys (FAS) over the Balod Project area. Electromagnetic and magnetic data were acquired from the survey. The Tempest EM and Mag system was flown with a line spacing of 200m and terrain clearance of 120m in a north-south traverse line direction. A CASA C212 – 200 Turbo Prop Survey Aircraft registration VH – TBM was used for this survey.

The Tempest survey over this RP was flown in March 2005. A total of 1945 line kilometres was flown in this RP.

Based on the airborne magnetic and EM survey over the RP area, 25 anomalies were identified (Map 14) for geophysical follow up. An apparent conductivity image is shown in Map 12 and Total Magnetic Intensity (TMI) image is shown in Map 13.

4.6 Ground Geophysical Survey

One anomaly identified from airborne survey was covered by both ground magnetic and ground EM survey as it is associated with high interest grain anomalies. A summary of Geophysical anomaly follow up status is given in Table 10 and 11. The plots of ground magnetic, ground electromagnetic and ground gravity data are attached as Appendix 2, 3 and 4 respectively.

Based on encouraging visual and probe results received from reconnaissance and follow up stream and loam samples collected from this RP a total of five blocks were identified for ground magnetic survey in this RP and three blocks were covered by ground gravity survey. A total of ~2590 line kilometers was covered by ground geophysical survey. A total of 15 anomalies were identified for drilling from the five ground magnetic survey blocks (Map 15) and 8 anomalies were identified for drilling from the three ground gravity survey blocks (Map 16).

4.7 Drilling

A total of 151 bore holes were drilled in the RP area during the reporting period using core and percussion drilling methods (Map 17). A total of 30 bore holes were drilled on anomalies identified from geophysical surveys and most of the boreholes (total 121) were drilled in and around the high interest indicator minerals reported from closed spaced loam samples in the southern part of the RP.



A summary of borehole details is given in Table 12. The borehole log sheets of all the anomalies drilled are attached as Appendix 5.

5.0 Interpretation

Several exploration techniques were used in this RP. The southern part of the RP has reported a number of high interest garnets and spinels with encouraging mineral chemistry which indicate presence of kimberlite in this area. Closed spaced drilling in and around the positive loam samples couldn't intersect any kimberlitic rock. This can be interpreted as the size of the kimberlites producing these grains is small.

6.0 Personnel

Name	Designation	Education
Basudeb Datta	Senior Geologist	M.Sc. - Applied Geology
K.V.Praveen Kumar	Staff Geologist	M.Tech-Remote Sensing
Anuradha Sarangi	Geologist	M.Sc Geology
Prashant Laharia	Geologist (in contract)	M.Sc Tech Geology
Sukhbinder Sharma	Geologist (in contract)	M.Sc Geology
Manish Kumar	Geophysicist	M.Sc. Tech-Geophysics
Rekha K.R.	Kimberlitic Mineral Analyst	M.Sc Geology
Shobha N.	Kimberlitic Mineral Analyst	M.Sc. Geology
Sanjay Deogiri	ICT Manager	B.Sc. Electronics, MCSE
Rina David	SHE Officer	MBA
Oblesh	Field Driver	X Std.
J.Subramani	Field Driver	X Std.
Padbanabham	Field Driver	XII Std.
Raghu M.	Drill Operator	X Std.
Siddaraju	Drill Operator	XII Std.
Gajanana Naik	Treatment Plant Operator	XII Std.
K.Narayanan	Security Officer	Graduate
Ranchor Bhat	Mag-operator (in contract)	XII Std.
Vijay Singh	Mag-operator (in contract)	XII Std.
Jagdish Lal Jat	Mag-operator (in contract)	XII Std.

Labour

Labourers were employed on a daily basis from local towns and villages to help with the field work.



6.Expenditure

Total expenditure of Rs 60,894,208 incurred for the Reconnaissance Permit to date. The expenditure was incurred as follows:

Capital expenditure: Rs 7,138,555

Revenue Expenditure: Rs 53,755,654

7.Training

De Beers maintains high operating standards including safety and environmental awareness. To this end, training is an integral part of career development with the organization. The following is a short summary of trainings completed to date.

All staff including geologists and field drivers received first aid and safety training, including fire fighting. All staff also receives ongoing education in HIV/AIDS awareness and other wellness issues. All geologists received training on First Aid conducted by International SOS.

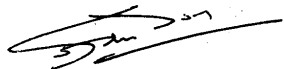
Geologists received training in field navigation, sample site selection, sample collection, labeling and recording of sample data, core drilling. Both geologists and geophysicists have also received training in undertaking of ground magnetic and electromagnetic surveys. Quality control and further on the job training is ongoing.

Geologists have also received training in basic kimberlite geology and field identification. Field orientation training to all the new geologists and geophysicists was completed in the first week of Feb'2005 on the known kimberlite occurrences in southern India.

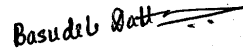
Geologists and geophysicists received training on ArcGIS software during the reporting period.

Managerial skills related training was completed in March, 2005 to all the project leaders.

Geologists attended a Geosoft training programme in August 2004.



Sojen Joy
Technical Services Manager
De Beers India Pvt. Ltd.
(Formerly known as De Beers India Prospecting Pvt.Ltd.)



Basudeb Datta
Senior Geologist
De Beers India Pvt. Ltd.

