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Rio Tinto Exploration India Private Limited
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**Final relinquishment Report on the Chandrapur
South Reconnaissance Permit, Maharashtra,
India**

March 2012

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1. Summary

This is the final relinquishment report on the exploration for diamond and other mineral commodities carried out on the **Chandrapur South (S)** Reconnaissance Permit (RP), executed on 01/01/2009, for the period from 01/1/2009 to 01/01/2012, in compliance with section 16 of the Mineral Concession Rules, 1961.

This report details all exploration activities completed and compiles all geological data collected by the company within the RP area during the tenure of the permits.

A total of 29 gravel samples collected and processed and results were received. Based on the desk top studies, the results received it is interpreted that the Chandrapur South Project has low potential for diamondiferous kimberlites and hence RP area is proposed for relinquishment

2. Introduction

This progress report pertains to all exploration activities for diamond and other mineral commodities carried out by Rio Tinto Exploration India Limited in the Chandrapur South RP (Plan1-NDbg0960) during the period from 01/1/2009 to 01/01/2012

Name of RP	RP Number	Total Area	Date of execution	Area retained	Final relinquishment
Chandrapur south	PLS-2701/CR168/IND-9	1189km ²	January 1 st 2009	506km ²	January 1 st 2012

Table1: Summary of Reconnaissance Permit

Desktop analysis of geological maps, satellite imageries and older exploration data was carried out and a total of 29 gravel samples were collected in the area.

Chandrapur south RP in Maharashtra is located in Survey of India's 1:250,000 scale toposheet number 55P & 64D, and covers an area of 2228 km² in the districts of Chandrapur, Nagpur, Bhandara, Gondia and Gadchiroli. About 60% area of the RP is in Chandrapur district which is an old city and now changing drastically to become an industrial and mining hub. NTPC's thermal plant generates electricity using coal. cement and paper factories, huge lime stone deposits, bauxite, iron, and chromite mines are the sources of wealth for the district. Tadoba-Andhari Tiger reserve is a major tourist attraction. There are few tribal people living close to the forest in the area. In spite of industrialization and mining, the forest have been well preserved and maintained. Pressure on the forest from the community is less when compared to other parts of India.

The total population of the district of Chandrapur is around 20, 77,909 (Census of India 2001, Data) with male/female ratio of 1000/948. There are approximately 473 inhabited villages under the RP area of which 298 villages falls in Chandrapur district. The area has a literacy rate of about 73.07%.

Nagpur is the closest airport to the tenement area (~152 km). The RP area is also well connected by road and railway network system. State Highway is the major roads access to the tenement. Chandrapur, Nagpur, Bhandara and Gondia are the major railhead

proximate to the tenement having 24hrs railway connectivity. Nagpur one of the biggest railway junction, while Chandrapur Station is located on the main route of Bangalore, Chennai, and New Delhi route of South central railway.

3. **Geomorphology**

The prospect area shows undulating topography with elevation ranging from 200m to 450m. The western part is fringed by sedimentary plateau regions with the general slope towards east. The eastern margin of the area is flanked by undulating hills of granite-granophyres with regional slope towards west. The central part of the region is traversed by the Wainganga river which acts as the major drainage divide. In general, the topography within the area varies from low, rugged hills fringed by colluvium, grading from scree to coalesced alluvial fans, and open gently sloping sheet wash plains, to broadly undulating areas of gently rolling peneplains. Local drainages have lithological and structural controls. Intense agricultural activities throughout have frequently diverted most first order and often second order streams into paddy fields such that these streams are no longer traceable on the ground. Soil type in the RP area is mainly lateritic to black soil with patches of sandy to clayey types or proximal alluvial are close to the drainage.

4. **Regional Geology**

The rocks of Archaean age include granites, gneisses, quartzites, brecciated quartzites and banded magnetite rocks with intrusives. Exposures of these gneissic rocks are sporadic due to their susceptibility to quick weathering. Phyllites occur in the extreme north of the area. They are fine grained, compact and generally non-fissile. In the east Dongargarh granite extends to the adjoining state Chhattisgarh, while in the north rhyolite is seen. NW-SE trending dolerites are present within Gadchiroli district.

The Proterozoic platformal rocks of this area comprise sandstones, shales, limestones and conglomerates. The most persistent and well defined rock types of the platformal sediments in the area are the sandstones, which show a wide range in colour, compaction and grain size. On account of their relative resistance to weathering they stand out as conspicuous hills and ridges. The shales are generally fine grained, thin bedded, light grey to light reddish in colour with development of a set of close vertical joints which make them fragmental. Limestones of the area are rich in lime and some in magnesia. The dip of the rocks varies from 50° to almost vertical.

Upper Carboniferous Gondwana Supergroup lithologies have been variously described as Chikiala beds, Kota Maleri, Kamthis, Barakars and Talchirs. The predominant rocks are the white felspathic sandstone, shales and clays along with coal seams.

Pleistocene- Recent Laterite is found in the area at many places capping over the Deccan Traps and the Archean Gneiss.

Quaternary Alluvium and Soil are seen at the North eastern part of the RP specially along the Waingangā River and surrounding areas proximal to major creeks also have alluvium and sand cover.

5. **Prospect Geology**

The RP area is comprised of constituents of Bastar Craton, Gondwana and Proterozoic Platformal sediments. The major part of southern and northern part of the RP area exposes Archean granite gneiss, granites and granophyres. However, small area in the western margin of the RP is comprised of Gondwana. Coal seams are mainly associated



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with the Talchir and the Barakar Formations. Proterozoic platformal sediments are present in the western part and central area of the property. In the NE, quaternary alluvium is present along Wainganga river (Plan 3-NDbg0877).

6. Regional Reconnaissance of Indicator Mineral (Gravel) Sampling Program

At reconnaissance stage 29 drainage gravel samples were collected with an average density of 1 in 20 square kilometre area. At each place one 80# size stream sediment sample was also collected and the results have been received.

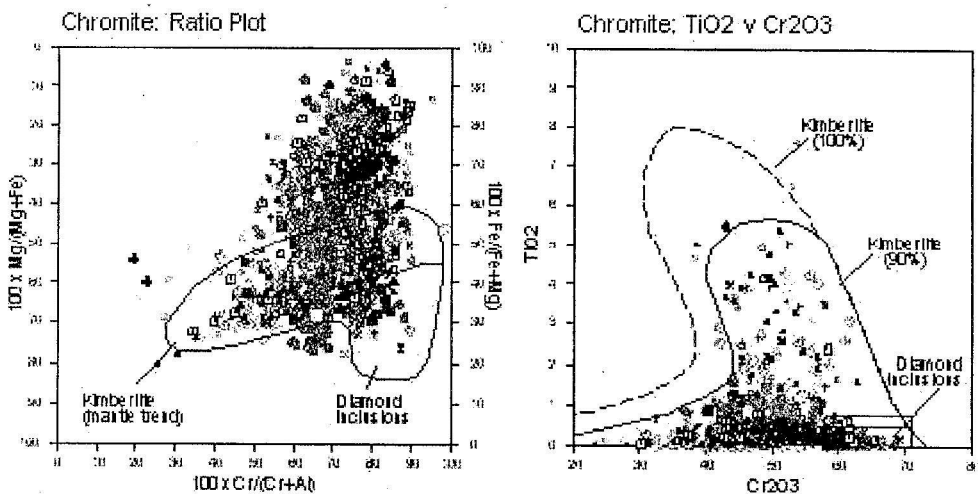
7. 80# Stream Sediment Geochemistry

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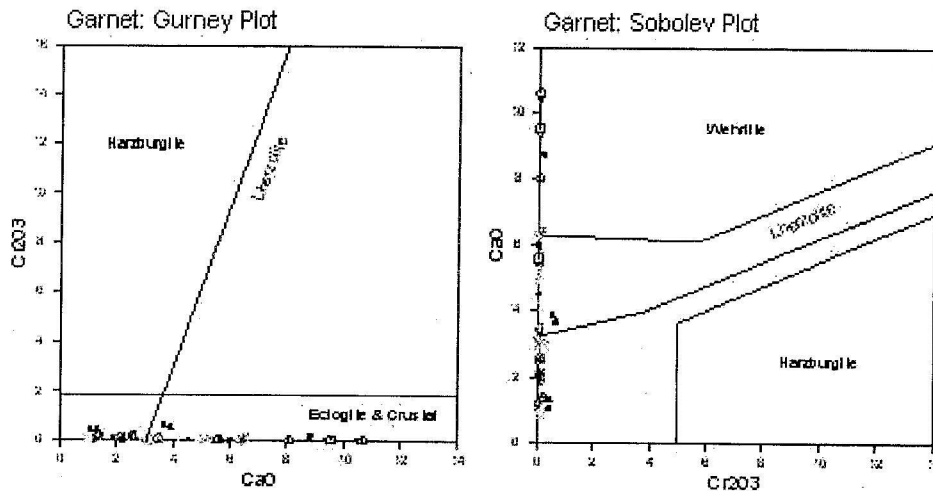
8. Results of the Exploration

The data is dominantly chromites with some garnets (all crustal and eclogitic). The chromite classifications and garnet classifications are as shown in the figures below. Also glance through the Appendix-2 for the mineral chemistry of the grains recovered from the samples. The sample locations are Tabulated as Appendix 1. Please see the Plan No 5-NDbg0935 for the geographic density Vs distribution of grains recovered from samples.

There is relatively low proportion of High Interest-Target Chromites (KIM_HI and KIM_INT respectively) when compared to the large number of background chromite population, as shown in the figure below.



The garnets, however, present another challenge as all are eclogitic (low Cr) in character and their co-occurrence with definitely crustal types. It can be noted that many of the garnets classifying as mantle are on the boundaries of the mantle field as shown in the plots below.



In conclusion, the identification of truly mantle grains in this region will remain a challenge, but convincing enough that the grains are derived from a potentially low interest source.

9. Health and Safety

Rio Tinto Group policies on Health and Safety are designed to minimise the risk of injury or occupation illnesses. A minimum management requirement at all of the company-managed operations is to ensure full compliance with the Rio Tinto Standards. The goal is for zero work related injuries or occupation illnesses. Minimum prerequisites require that all work activities be based on risk assessments ensuring that effective controls and safe work procedures exist for all hazardous activities.

Further the standards require a system for ensuring that employees are trained, equipped and where applicable, certified to carry out their work according to the applicable safe work procedures, and that their competence has been tested. Personal protective equipment of international standards was issued to each of the employees relevant to their conditions of working. All drivers employed werespecially trained in 4WD driving and safety by international driving consultants. All field staffs were also trained in advanced first aid by international trainers. Rio Tinto organised periodic refresher courses of such training programme to maintain the standards.

10. Environment

Rio Tinto's Environmental Policy aims to prevent or otherwise minimise, mitigate and rehabilitate any effects that the group's operations have on the environment. The internal environmental systems adapted by Rio Tinto has been accredited with ISO 14001 certification. Although exploration activities in reconnaissance permits are essentially non-invasive to the environment, the same rigor and level of compliance to the standards, systems and procedures is followed.

An environment management plan was put in place for field activities. This plan was constantly updated as the program developed. The plan evaluated potential environmental impacts associated with the activities and provided procedures to prevent or minimize impacts. In case where an impact was unavoidable or accidental, appropriate rehabilitation procedures were in place. Relevant exploration personnel including those of contractors were inducted and trained in these procedures. Control systems included incident reporting and annual environmental reporting to first-line management and corporate audits.

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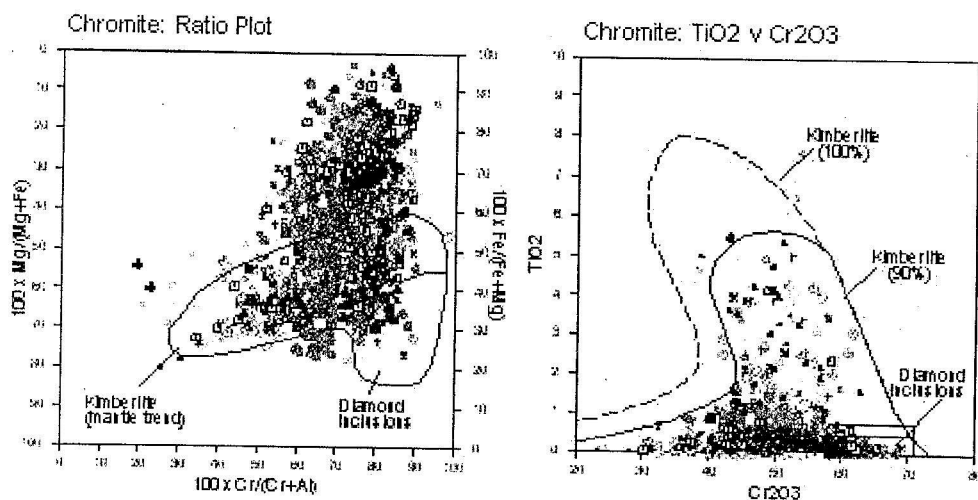
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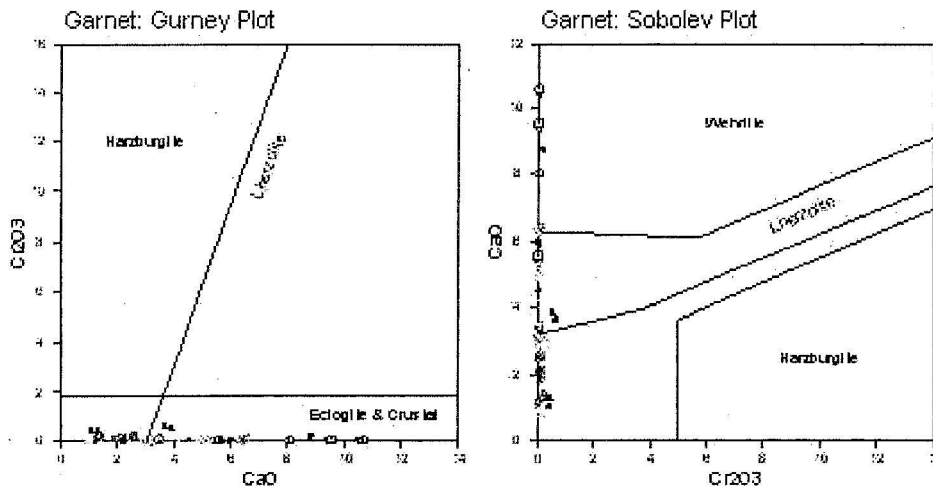
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The current period of work carried out was essentially non-invasive to the environment. However, a strict monitoring of any requirement for site rehabilitation during sampling was completed, and wherever required the site rehabilitation was done immediately after sampling.

11. Community Relations

Rio Tinto has a strong commitment to maintaining good relations with the community amongst where it works and to respect the laws, customs and traditions of the society. Local people were employed in the exploration team to work as field assistants, community team, drivers and other staff positions. The exploration geologists have visited many of the villages prior to sampling to explain about the work being carried out by RTX to the local community. Simultaneously, local field assistants were coached with regard to exploration to effectively communicate our activities to the local people in the field.

During the current period of the exploration activity, specific community relation policies were undertaken which includes distribution of community briefing sheets, employment of local people for work, relationships with preferred local suppliers/services, regular consultation with stakeholders and development of internal system of recording, reporting and monitoring of community activities.