

KAR-14&15

ACC - Rio Tinto Exploration Limited

A member of the Rio Tinto Group

2 PL over 25 sq.km.

Final Relinquishment Report

for
Raichur South (RP No. 18/ARP/2002) and
Bellary North (RP No. 19/ARP/2002)
Reconnaissance Permits

Kolhapur
19/8/05

Karnataka, India

Volume 1 of 2

Report and Plans

Date: 5th August 2005

- Copies to:
- Secretary, Department of Commerce & Industries, Government of Karnataka, Bangalore.
 - Directorate of Geology and Mining, Government of Karnataka, Bangalore.
 - Indian Bureau of Mines, Nagpur.
 - Geological Survey of India, Calcutta.
 - ACC Rio Tinto Exploration Limited - Bangalore.

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 Geological Survey of India
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1 EXECUTIVE SUMMARY

Exploration undertaken by ACC Rio Tinto Exploration Ltd within the company's Raichur South (RP No. 18/ARP/2002) and Bellary North (RP No. 19/ARP/2002) reconnaissance permits of Karnataka has successfully discovered 2 new kimberlites. However, the analysis of surface heavy mineral samples over these kimberlites failed to recover diamonds in all. The caustic fusion results of samples from these kimberlites still remain pending.

Exploration was initiated by ARTE after execution of the permits on May 7th 2002 and was completed on the third anniversary in 2005. Regional reconnaissance indicator mineral sampling from stream gravels (396 samples) completed over both RP areas returned abundant micro ilmenite and minor chromite, pyrope garnet & chrome diopside. One trace diamond was recovered from single sample, which is still to be tested and confirmed. SEM major oxide mineral chemistry completed on over 80,000 of indicator mineral grains further testified for the less potential of diamond association of the source kimberlites. Studies of these chemistries indicate a predominance of non kimberlite associated almandine – spessartine – grossular garnets, chromites and ilmenites with only minor and clustered occurrences of kimberlitic chromite and trace pyrope garnet and chrome diopside. Analysis of over 250 (-) 80 mesh stream sediment samples collected from each of the first pass reconnaissance indicator mineral sample sites indicated no significant potential for base or precious metal mineralisation in the area.

Prospective areas totalling approximately 297km² were further evaluated by 2742 line kilometres of ground magnetic surveys resulting in the definition of 83 targets. Each target was tested by soil and rock geochemistry (572 samples). Anomalous targets were further evaluated by rotary air blast (RAB) drilling with 53 drill holes for a total of 619 metres completed on high priority targets. Soil collected from one RAB hole returned suspected kimberlitic chemistry.

Total exploration expenditure for the 3 year for both the Reconnaissance Permits was 419 Lakh Rupees or 240% greater than the minimum expenditure commitment of 180 Lakh Rupees.

An application for one prospecting leases (PL's) covering the most prospective portions of the former RP areas would be submitted to the relevant government authorities. Further exploration for more kimberlites and the evaluation of those discovered is proposed pending grant of this PL.

2 INTRODUCTION

The contiguous Raichur South (RP No. 18/ARP/2002) and Bellary North (RP No. 19/ARP/2002) reconnaissance permits (RP) totaling 1972 km² were granted to ARTE Ltd on March 20th and 7th May 2002 (refer to table 1). At this the second anniversary of the permits, In compliance with the provisions of the MMDR approximately 367km² or 48% of Raichur South and 1070km² or 89% of Bellary North RPs were relinquished prior to the second anniversary of these permits. A plan showing the location of granted RPs and relinquished area is enclosed with this report as Plan NDbg04666. In compliance with the requirements of the MMDR limiting the term of reconnaissance permits to a maximum of three years, the two RP's in their entirety are recommended for relinquishment. Separately, 2 individual blocks totalling 25 km² from within the original reconnaissance permit area are being applied for as Prospecting Licences. Applications for these PL's are currently under preparation for submission.

This final relinquishment report details all exploration completed within the RP's as summarised in table 2. Complimentary periodic data and maps are further reported in the previous biannual and relinquishment reports including:

- ACC RIO TINTO Exploration Limited (February 2003); 1st Bi-annual Progress Report for Exploration of the Raichur South (RP No. 18/ARP/2002) and Bellary North (RP No. 19/ARP/2002) reconnaissance permits For the period May 2002 to November 2002.
- ACC RIO TINTO Exploration Limited (August 2003); 2nd Bi-annual Progress Report for Exploration of the Raichur South (RP No. 18/ARP/2002) and Bellary North (RP No. 19/ARP/2002) reconnaissance permits For the period November 2002 to May 2003.
- ACC RIO TINTO Exploration Limited (February 2004); 3rd Bi-annual Progress Report for Exploration of the Raichur South (RP No. 18/ARP/2002) and Bellary North (RP No. 19/ARP/2002) reconnaissance permits For the period May 2003 to November 2003.
- ACC RIO TINTO Exploration Limited (August 2004); 4th Bi-annual Progress Report for Exploration of the Raichur South (RP No. 18/ARP/2002) and Bellary North (RP No. 19/ARP/2002) reconnaissance permits For the period November 2003 to May 2004.
- ACC RIO TINTO Exploration Limited (February 2005); 5th Bi-annual Progress Report for Exploration of the Raichur South (RP No. 18/ARP/2002) and Bellary North (RP No. 19/ARP/2002) reconnaissance permits For the period May 2004 to November 2004.

All the above reports have been submitted with the relevant government institutions and are further archived with ARTE in Bangalore.

ARTE maintained a strong focus on health, safety, environment and community relations in its Karnataka diamond exploration projects. No lost time injuries and relatively few high-risk health and safety incidents were reported during the exploration period.

No part of the relinquished permit area is designated reserved forest. Most of the forest is dry (arid) deciduous thorny type with dominantly acacia flora. No significant environmental incidents were experienced during the period of this survey.

The Permits are located within the Bellary and Raichur Districts, bounded to the east by the Andhra Pradesh state border and the Tungabhadra River. There are more than 150 villages within the two RP areas with a total population estimated at over 5 lakh. Bellary has the nearest airport to the area and Raichur the nearest railhead. State Highway No. 63 linking Sindhanur to Raichur via Manvi provide major access to the area. All villages are linked by fair weather metalled or gravel roads. Agriculture is the main occupation for over 70% of the population with

intense paddy cultivation of land irrigated by the Tungabhadra canal system. Agriculture in the region is mostly two-three crops of rice, sunflower, peanut and cotton being planted throughout the year.

A Community Relations program of informing villagers of our activities and requesting access to the lands was conducted throughout the area prior to commencing work. Two Community Relations Officers are now employed to maintain contact with the various communities and to manage any issues that arise. No significant Community Relations incidents were encountered during the period of this survey.

3 REGIONAL GEOLOGY

The regional geology map based on a compilation of published and unpublished GSI geological maps is given in Plan NDbg0467. The area is dominated by lithologies of the Eastern Dharwar Craton. The oldest rock types include granitoid gneiss with enclaves of pyroxenite, gabbro, amphibolite and other schistose rocks collectively known as the 2900Ma Peninsular Gneiss Complex. The NNW-trending Proterozoic Kushtagi Schist Belt and the Gadwal Schist Belt border the permit areas in the west and east respectively. Within the permit area, outcrop is limited being overlain by heavily cultivated black soils and erratic alluvial cover of the Tungabhadra River.

4 RESULTS OF EXPLORATION

4.1 Geology

The dominant structural features observed is the NNW – SSE to NW – SE trending, which are parallel to sub parallel of Proterozoic Kushtagi Schist Belt and the Gadwal Schist Belt in the west and east. The other dominant fracture of the region runs almost E-W. Tungabhadra the main river follows this trend at places. Elsewhere, due to the cover sequences structural lineaments are largely obscured by the Black Soil cover. Not surprisingly no features that could be directly attributed to kimberlite intrusion are identifiable from the Landsat TM data. Analysis of the Landsat TM imagery delineates extensive areas of heavily cultivated black soil forming a broad low level topographic basin centred on the Tungabhadra (and Hagari) River. Minor alluvials of the Tungabhadra River overlap onto the black soil planes. The regolith terrane map of the RP area is enclosed as Plan NDbg0468.

4.2 Gravel (Indicator Mineral) Sampling

Orientation sampling downstream of the known kimberlites in Andhra Pradesh RPs indicated that anomalous indicator mineral trains could be consistently detected for up to 4 linear kilometres downstream of the known Wajrakarur kimberlites. On this basis primary reconnaissance gravel sampling density of one sample per 4-5 linear kilometres of drainage or one sample per 10-12 km² was selected.

In total 396 gravel samples including primary reconnaissance and follow up infill gravel samples were collected from within the RP areas. Each gravel sample comprising of approximately 30kg of –1mm sand was collected by hand from heavy mineral concentration zones within the active stream sediment bed load. 15 large approximately 200kg of –1mm gravel samples were also collected in most prospective area due to lack of diamond recovery in small sized samples. All samples were processed at the company's specialist processing facilities by a combination of magnetic and heavy liquid techniques. The +0.25-0.85mm paramagnetic heavy mineral concentrates are observed in full with individual kimberlitic indicator mineral grains, namely pyrope, chromite, picro ilmenite and chrome diopside being manually sorted, counted and described. The mineral chemistry of up to 50 grains of each suspected kimberlitic indicator mineral species were subsequently probed by a scanning electron microprobe or mass analyser to confirm the observed mineral species with the data plotted on standard mineral chemistry plots to establish any kimberlite/ diamond association. The +0.105-0.85mm non-magnetic fraction of samples returning positive indicator minerals were further processed and observed for diamonds.

Detailed observation results for all of the gravel samples are listed in Appendix 1 and the probe results in Appendix 2. A summary of grains observed and probed is listed in table 3.

Indicator Minerals	Number of grains recovered	Number of grains probed
Diamond	1 (?)	-
Garnets/Pyrope	22,102	19,795
Chromite	5,738	4,401
Ilmenite	50,373	45,325
Pyroxenes (Chrome Diopside)	952	521
Other silicates	9,980	9,980
Total	89,146	80,002

Table 3: Gravel Sample (396 samples in total) Indicator Mineral Summary.

A location plan of the heavy mineral samples is given in plan NDbg0469 with the distribution of the kimberlitic indicator mineral species show in plan NDbg0470. The distribution is typically incoherent with the relatively low counts of definitive kimberlite species but variable distribution of crustal associated chromite and garnet.

4.2.1 Gravel Sample Diamond Results

Only stone recovered in one of large gravel samples is a micro diamond awaiting confirmation. Caustic fusion results of rock chips from new suspected kimberlite are still awaited.

4.2.2 Gravel Sample Garnet Results

Pyropes are dominantly eclogitic garnets with lherzolitic pyropes (see figures 1) with lesser wehrlitic and trace harzburgitic. Notably there is a significant component of moderate Cr₂O₃ lherzolitic pyrope lherzolite associated diamonds. Elsewhere, garnets are dominated non-kimberlitic varieties including grossular, uvarovite, spessartine and almandine.

4.2.3 Gravel Sample Chromite Results

The significant populations of kimberlitic chromite (see figures 2) forms definitive shallow crustal chromites defined by low MgO and relatively constant Cr₂O₃ mineral chemistries predominate. There is however a strong overlap between kimberlitic and non kimberlitic chromite chemistries especially for medium to low MgO and Cr₂O₃ varieties making interpretation potentially ambiguous especially for low grain count chromite only anomalies. The subdued mantle-sampling trend to lower Cr₂O₃ values could be of kimberlite association.

Outside of the kimberlite cluster areas, definitive shallow crustal chromites defined by low MgO and relatively constant Cr₂O₃ mineral chemistries predominate. There is however a strong overlap between kimberlitic and non kimberlitic chromite chemistries especially for medium to low MgO and Cr₂O₃ varieties making interpretation potentially ambiguous especially for low grain count chromite only anomalies. Gravel samples contain either scarce definitive kimberlitic chromites or with populations of indeterminate chemically overlapping chromites have been grouped together as low priority targets and in most case not fully evaluated. Although some of these low priority indicator mineral anomalies may be directly sourced from nearby kimberlite, the absence of high Cr₂O₃ / high MgO chromites suggests limited diamond potential.

4.2.4 Gravel Sample Ilmenite Results

A notable number of ilmenite recovered from the gravel samples is dominated by kimberlite associated picro ilmenite however low MgO/ low Cr₂O₃ crustal associated varieties are also present throughout the permit blocks (see figures 3). Picro ilmenite are recovered evenly from central to western part of Raichur South RP area with high MgO and moderate Cr₂O₃ contents indicating a deep primitive source and little oxidation. Moderate MgO contents of picro ilmenite from samples from the Bellary North RP, suggests a more evolved mantle with little diamond preservation potential.

4.3 Loam, Auger and Rock Indicator Mineral Sampling

Various targets and known kimberlites within the permit area have been tested or characterised by indicator minerals sampling including 19 loam samples, 6 auger soil samples and 3 rock samples. Loam samples were all collected as a nominal 30kg, -1mm sample of soil scraped from the topmost 1cm of the soil profile preferably from a zone of heavy mineral or courser sand accumulation on or immediately down slope of the tested target. Auger samples are generally composed of a nominal 30kg, friable rock or soil collected from all bottom of the screw of shell type auger holes at depths of 1-5 metres. Rock samples were generally collected from the base of shallow (<1 metre) pits excavated into relatively uncontaminated bedrock. Processing of loam, auger and rock samples was variable including pre crushing of consolidated samples, combined magnetic and heavy liquid separation techniques as per the gravel sample processing technique for indicator minerals and liberated diamonds or caustic fusion for total diamond content. Indicator minerals observed and probed and diamonds recovered are listed in appendix 1, 2 and 3 respectively.

4.4 Geochemistry Surveys

A total of 254 stream sediment samples, 546 soil samples, 26 rock samples, and 115 drill chip samples have been collected and assayed from within the permit area. Summary statistics of geochemical samples collected are given in table 4. Full data including sample locations and assay results for all samples collected are listed in Appendix 3 - 5 respectively.

Permit	Stream Sediment	Soil	Rock	Drill Chip
Bellary North	130	88	9	0
Raichur South	124	458	17	115
TOTALS:	254	456	26	115

Table 4: Statistics of geochemical samples collected in the Reconnaissance Permit area.

Stream sediment samples were collected in combination and at the same sample site as the reconnaissance indicator minerals. Each sample consists of approximately 100gm of -80# (-180µm) silt collected from the active stream bed in the centre or lowest part of the stream. Soil samples consist of approximately 100 grams of -80# (-180µm) C - horizon soil typically collected from a shallow 10 - 20 cm deep pit or at the bottom of an auger hole. Soil samples have been variably sampled either in a nominal 150 metre line spacing and 50m sample spacing grid or as crosshair or single line traverses with sample spacings varying from 25 - 100metres. Rock samples wherever possible are composited either as rock chips for any outcrop or as composites of similar lithology for float samples. For RAB drill chips, a sample of the recovered fines was generally at the bottom of hole or based on the geological logging. Sample size was a nominal 1kg for both rock and drill chip geochemical samples.

Standard sample analysis is for a suite of 37 elements by mixed acid digest with ICP-MS or ICP-OES detection. Elements analysed with individual detection limits in brackets include: Ag (0.1ppm); Al (10ppm); As (0.5ppm); Ba (10ppm); Bi (0.1ppm); Ca (10ppm); Cd (0.1ppm); Ce (2ppm); Co (2ppm); Cr (2ppm); Cs (0.1ppm); Cu (2ppm); Fe (100ppm); K (10ppm); La (1ppm); Mg (10ppm); Mn (5ppm); Mo (0.1ppm); Na (10ppm); Nb (0.2ppm); Ni (2ppm); P (5ppm); Pb (0.5ppm); Rb (2ppm); Sb (0.5ppm); Se (0.5ppm); Sr (2ppm); Ta (1ppm); Te (0.5ppm); Th (20ppm); Ti (10ppm); V (2ppm); W (0.1ppm); Y (1ppm); Zn (2ppm) and Zr (10ppm). For stream sediment samples, further analysis by 10 gram fire assay with ICP-OES finish are conducted for Au (1ppb), Pt (5ppb) and Pd (1ppb).

4.4.1 Stream Sediment Geochemical Results

The stream sediment chemistry as subtle mixed compatible and incompatible element anomalies, failed to identify any area with potential for kimberlites and are associated with only background stream sediment geochemistry. No potential for base and precious metal mineralisation is indicated in the area with several point sources returning maxima of 12ppb Au, 2.2ppm Ag, 10ppb Pt, 52ppm Cu, 68ppm Pb and 165ppm Zn. The combination of point sources, lack of continuity and lack of multi element signatures suggest associated mineralisation to be minor or the anomalies themselves to be non-mineralisation associated. The basic statistics is provided as Table 5 and Stream sediment sample locations are given in Plan NDbg0471.

4.4.2 Soil Geochemical Results

The soils results include samples collected during follow up of ground magnetic features, as surface, auger and pit. Within areas of residual soil cover, surface soil geochemistry is shown to be ineffective in the delineation of kimberlite with uniquely elevated compatible and incompatible elemental signatures including Nb, Ce La, Mg, Ni, Cr and variable Ti. The main reason is due to 1 – 2 metres of deflationary surface cover in the floodplains of Tungabhadra River and black soil areas. Auger soils collected from B or C-horizons over Koti-1 and RB-01 kimberlites however showed anomalous Nb values. Elsewhere elevated Ce and La plus or minus Nb may be associated with various alkaline granitoids of the Archaean Basement. Nb in soil geochemistry is presented as a map in Plan NDbg0472. The basic statistics of soil geochemical results is presented as Table 6.

4.4.3 Rock Geochemical Results

Similar to soils, individual kimberlite rocks produce distinctly elevated compatible and incompatible elemental signatures. The kimberlite weathering products including calcrete although having variably elevated incompatible element signatures is typically depleted in the compatibles (Mg, Ni and Cr) and in several cases returned similar chemistry to calcrete derived from the some of the alkaline granitoids. The basic statistics of rock geochemical analysis is given as Table 7.

4.4.4 Drill Chip Geochemical Results

Geochemistry was conducted on drill chips from RAB drilling to confirm the observed kimberlite intercepts. A total of 115 drill chips samples were collected from the 53 shallow RAB holes. The location of these RAB drill holes is provided in Plan NDbg0473 and the complete assay results are provided as Appendix 7-9. RB-01 kimberlite intercept returned distinctly anomalous compatible and incompatible element signatures as shown in Table 8. The Koti-1 prospects the chips from a shallow hole returned moderate kimberlitic elemental anomaly which could also be related to alkaline granitoids.

4.5 Ground Geophysics

Within the Bellary North and Raichur South Reconnaissance Permits, 11 ground magnetic grids, totaling 2718 line kilometers (297 km²), at a nominal line spacing of 75 - 150meters were surveyed covering the anomalous catchments defined on the basis of highest priority anomalous indicator mineral results. Three additional detailed grids, totaling 24 line km, were completed over high priority ground magnetic anomalies. A map showing the ground geophysics grids is attached as NDbg0474 with descriptions of each grid surveyed outlined below.

Grid	Area (sq. km)	Line Spacing (m)	Line km
7010 Detail	0.2	50	4
7037 Detail	0.2	50	5
RB01 Detail	0.4	25	15
RS01	9.5	100	115
RS02	34.2	75	647
RS05	24	100	265
RS07	13.8	75	181
RS09	21	100	212
RS11	19	75	181
RS12	18.4	150	121
Tungabadhra Infill	91	150	547
RS58	29.5	150	195
RS11 South	20	100	201
RS53	5.4	100	53
TOTAL LINE KM:			2742

Table 9 Ground magnetic survey grid descriptions.

Ground geophysical surveys were carried out in preference to airborne geophysics due to the limited anomalous area defined by high priority kimberlitic indicator minerals and the higher sensitivity of ground based surveys in detecting subtle magnetic variations within the terrain.

Surveys were completed using Scintrex Envimag magnetometers operating in "walkmag" mode. Readings were taken at 2 second intervals, equating to approximately 2-3 meters along the line. Navigation was by hand-held GPS, providing a positional accuracy of +/- 10 meters. A magnetic base station, positioned central to the individual grids, measured diurnal variations at 20-second intervals.

Raw field data were corrected for diurnal variations and filtered to remove "movement noise" inherent to the Envimag "walkmag" system. The filtered data were then reduced to magnetic pole to remove the effects of geomagnetic inclination and declination on the anomaly geometry. Anomalies were selected and prioritised based on their profile form, size and proximity to anomalous samples.

Eighty three anomalies were identified for drill-testing, with 2 targets nominated as high priority, 33 moderate priority and 48 low priority. The description of these targets is provided as Appendix 6.

4.5.1 Ground Magnetic Grids

RS01

The RS01 grid was established over a priority indicator mineral catchment, yielding abundant kimberlitic indicator minerals. Several discrete targets were identified on the grid, although none

were source by kimberlite. The grid is characterised by a moderately active magnetic background, cross-cut by WNW-trending dyke features.

RS02

The RS02 grid is dominated by a NW-trending fabric, intersected by EW-trending lineaments. The intersections of these linear features represent a potential site for kimberlite emplacement. Targets identified were predominantly magnetic lows, situated on, or proximal to, lineament intersections.

RS05

Two distinct magnetic domains are evident on the RS05 grid. The western area is characterised by a quiet magnetic background, crosscut by NW-trending dykes. The eastern area is characterised by an active magnetic background, possibly sourced by younger granite intrusive. Within the grid, a discrete RTP magnetic high anomaly was identified and proved to be sourced by kimberlite.

RS07

The RS07 grid is characterised by a moderately active magnetic background, cross-cut by numerous NNW-trending linear RTP highs, sourced by dolerite dykes. Targets identified on the grid were discrete magnetic highs and lows, peripheral to the dolerite dykes.

RS09

The RS09 is dominated by a broad NW-trending magnetic high central to the grid. Targets *identified vary between discrete magnetic highs and lows, proximal to EW linear features.*

RS11

The RS11 grid was completed in two phases, due primarily to accessibility restrictions in the cultivated areas, adjacent to the Tungabhadra River. The grid is characterised by a range of magnetic domains ranging from quiet to moderately active magnetic backgrounds, intersected by predominantly ENE-trending lineaments. Targets identified are predominantly discrete magnetic lows within the active magnetic background.

RS12

The RS12 grid is characterised by a relatively quiet magnetic background, crosscut by NW-trending magnetic dolerite dykes. No drill targets were identified within the grid.

Tungabhadra Infill

The Tungabhadra infill grid was established to cover an area adjacent to the Tungabhadra River, which was deemed to be under-sampled by standard heavy mineral sampling techniques, due to the pervasive alluvial cover in the area. The grid is characterised by varying magnetic domains with a dominant NW-trending fabric. Targets identified were discrete magnetic highs and lows and strike limited linear features.

RS53

The RS53 grid is dominated by WNW-trending linear RTP anomalies, sourced by dolerite dykes. Intersections with cross-cutting features represent potential sites for kimberlite emplacement, although proximal sampling in these areas failed to yield significant kimberlitic indicator minerals.

RS58

The RS58 grid is dominated by a NW-trending linear magnetic low marking the contact between two distinct magnetic domains. Targets selected for further follow-up are generally discrete magnetic lows.

4.5.2 Max-Min Electromagnetics

Detailed horizontal loop electromagnetics (Max-Min) surveys, totaling 3-line km were completed over the RB01 kimberlite. A moderately conductive response was observed, coincident with the magnetic anomaly, suggesting the presence of a surficial weathering profile overlying the kimberlite.

The Max-Min electromagnetics survey was completed under the following specifications;

Instrument:	Apex Parametrics Max-Min 9-Frequency System
Frequencies:	220, 880, 1760, 3520, 7040 Hz
Tx-Rx Loop Separation:	100m, controlled by fixed reference cable.
Station Spacing:	25m
Navigation:	Hand-held GPS

5 SUMMARY OF ARTE DISCOVERED KIMBERLITES

5.1 RB-01

The RB-01 kimberlite is located within Peninsular Gneisses of the Archaean basement adjacent and along strike of an east-southeast trending granitoid hill. The kimberlite was discovered through the follow-up of anomalies identified from the ground magnetic surveys. The kimberlite, designated RB01, occurs as two separate elongate lobes approximately 150 metres apart forming a combined areal extent of 0.4Ha. The kimberlite is characterised by individual high amplitude dipolar magnetic response over each lobe and a coincident conductive response, defined by the Max-Min survey, suggesting a surficial weathering profile. The kimberlite is overlain by up to 3m of alluvial/colluvial cover.

Inverse modeling of the TMI profiles with commercial modeling software (Encom ModelVision) suggests the RB01 body is sub-vertical with a magnetic susceptibility of 5000×10^{-5} SI units at a depth of 10m. Augering to a depth of 4.5m intersected highly weathered serpentinised material with no remanent kimberlitic textures observable. Magnetic susceptibility increases with depth to a maximum of 450SI at 4.5m.

The RB01 kimberlite was confirmed by drilling single angled RAB hole terminated at 75 metres depth. The macrocrystic kimberlite was intersected from 7m to 75 metres. The kimberlite identified as dominant hypabyssal macrocrystic (Hmk) phase. Total 530 kg of kimberlitic material could be recovered in four samples. These samples are being tested for diamonds in Bangalore. Previously collected loam and pit samples failed to recover diamonds from this kimberlite.

5.2 Koti-1

The Koti-1 kimberlite is located within Peninsular Gneisses of the Archaean basement. Two drill chips/soil samples from RAB hole KARAB031 testing ~6Ha RTP mag low feature and a spot soil anomaly returned kimberlitic chemistry. The hole was terminated at 12m depth and the drill

chips were logged as dark coarse-grained granite/ granodiorite and amphibolite. The analysis of two samples from this hole are tabulated below

RAB Hole ID	Depth	Nb ppm	Ce ppm	La ppm
	From - to			
KARAB031	1m – 4m	17.3	108	70
KARAB031	4m – 12m	43.1	307	161

Table 10 Drill chips geochemical results at Koti-1.

One of three loam samples collected previously over this anomaly returned single lherzolitic pyrope and eclogitic garnets and few micro-ilmenites. Other samples returned single marginal lherzolitic pyrope. A first pass sample about 500 m downstream of anomaly returned large number of eclogitic pyropes and mantle trend chromites.

Based on auger hole geochemistry additional 184 grid soil samples were collected from the surface and the results more or less confirmed the Nb anomaly conformable with magnetic low. Geomorphologically the kimberlite (?) forms a depression with granite outcrops coincident with mag high surrounding it. One bulk gravel sample from a first order creek and one loam sample have also been collected to test the presence of kimberlitic indicators and diamond. Also, the drill chips have been submitted for caustic fusion Results are pending.

6 HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY RELATIONS

All work completed by ACC Rio Tinto Exploration within the Reconnaissance Permits have been conducted according to Rio Tinto's Health, Safety, Environment and Community Policies as detailed in "The Way We Work", a copy of which has been provided to the Government of Karnataka.

6.1 Health and Safety

All employees are trained and counselled in several aspects of exploration safety. All drivers have completed competency based 4-wheel drive and defensive driver training and all senior staff first aid/ accident management training and other safety training. ARTE's safety management practices and performance have also been checked by Internal and External auditors and found to be of good standard.

No lost time injuries have been recorded from this project.

6.2 Environmental

Reconnaissance exploration for diamonds is essentially non-invasive to the environment, however all work is conducted according a site specific Environmental Management Plan. The plan is designed to ensure minimal environmental impact of all exploration operations including those of contractors and ensures that any damage or impact caused is rapidly rehabilitated.

Internal environmental control systems including incident and annual environmental reporting and internal auditing. There have no environmental incidents, impacts or damages of significance recorded for the RP area.

6.3 Community Relations

ARTE has a strong commitment to maintaining good relations with the community amongst which it works and to respect the laws, customs and traditions of these societies. A number of local people have been employed on the exploration team to work as field assistants, drivers and in other staff positions. Exploration geologists and field assistants routinely visit villages prior to sampling to explain to seniors, elected representatives and others from the village about the work being carried out. No significant Community Relations incidents of significant impact were incurred during the RP period.

8 REFERENCES

Nil

Keywords

India, Karnataka, Diamond Exploration, Kimberlite, Diamonds, Kimberlitic Indicators, Geochemical-Soil Sampling, Loam Sampling, Geophysics, Magnetism, Drilling

Locality

Karnataka 57 A, 57 E 1:250 000 sheets

Descriptor

Final report of all exploration for diamond and other mineral commodities completed in the Raichur and Bellary districts of Karnataka by ACC Rio Tinto Exploration Ltd, during the term of RP Nos. (RP No. 18/ARP/2002) & (RP No. 19/ARP/2002) from 7th May, 2002 to 6th May, 2005.