

TSODILO RESOURCES ANNOUNCES KIMBERLITE FINDS

By Peter Walker

Canadian junior explorer, Tsodilo Resources, recently completed a programme of reverse circulation (RC) drilling on three selected targets in its NW Botswana licence area with two new, large kimberlite pipes found.

Tsodilo is exploring in northwest Botswana for diamonds derived from primary kimberlite intrusives. Its licences are held in two Botswana registered subsidiary companies, Newdico (Pty) Ltd and Gcwihaba (Pty) Ltd; the former has Trans Hex Group as a 25% shareholder and the latter, which is wholly owned by Tsodilo Resources, is conducting an exploration programme in joint venture with SouthernEra Resources on a 50/50 contributory basis. Tsodilo manages both exploration programmes.

The northern block of licences held by Newdico covers the major part of the Congo craton in Botswana, while the southern Gcwihaba block covers the craton margin. Exploration of the northern block, the Ngami project, is now well advanced and is centred on an area previously held by a joint venture of Ashton and Reunion mining companies. Their joint venture exploration program found a cluster of 19 kimberlites near the village of Nxau Nxau, four of which carried micro-diamonds and all were in the crater facies, which indicates only minor erosion of the upper parts of

the kimberlite. The joint venture gave several reasons for dropping this ground, but Tsodilo's review of their programme suggested that further work here might be rewarding for very good reasons:

- Macro diamonds and G10 garnets found at two sites down-slope (west) from Nxau Nxau are associated with alluvial systems and have a distal source.
- The joint venture failed to investigate a number of large aeromagnetic anomalies close to the Nxau Nxau cluster.
- The joint venture failed to use gravity surveys as a means of locating kimberlite.

In addition, this portion of the Congo craton has characteristics that are favourable to the emplacement of diamondiferous kimberlite.

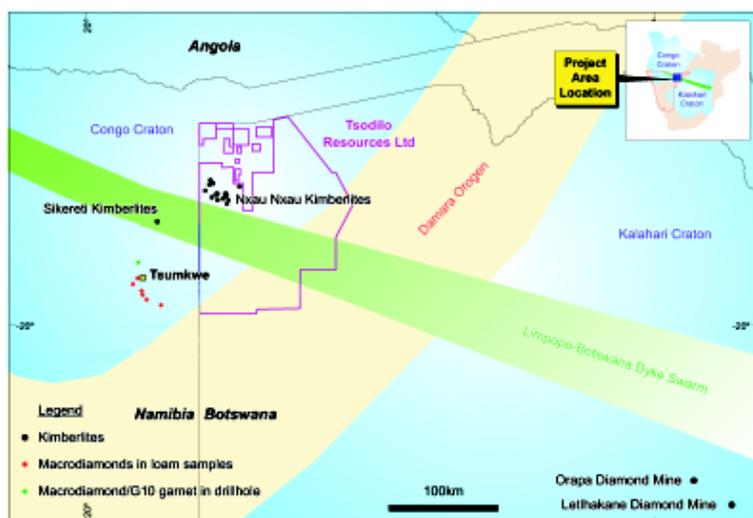
Tsodilo's exploration director, Dr Andy Moore, describes the objective of the 2003 field programme as obtaining hard factual evidence to ground-truth the theoretical model. "We concentrated most of our efforts in and around the Nxau Nxau kimberlite cluster where there are a

number of untested airborne magnetic targets in the immediate vicinity of the cluster. Detailed magnetic, gravity and indicator mineral sampling grids were laid out and the results confirmed and refined our first interpretations of the airborne magnetic targets – that there could be at least three large diameter pipes greater than 10 hectares in area. As a rule of thumb the larger pipes in a cluster have the highest grades, so we planned on drilling these three at the earliest opportunity."

That opportunity came in the middle of September, when anomalies A12, A37 and A38 were drilled using a reverse circulation rig.

Two holes were drilled on the A12 target and both intersected kimberlite crater sediments beneath a relatively thin (43 m) depth of Kalahari cover. The A12 kimberlite is estimated to be some 15 hectares in area, significantly larger than any of the previously discovered Nxau Nxau kimberlites, most of which are between 1 and 7 ha in surface area.

Six holes were drilled into the A37 target. Five of these holes were drilled along an approximately WNW-ESE line some 1,600 m in length to investigate the major gravity low and subsidiary low to the east. All five holes intersected kimberlite crater facies sediments, which are interpreted as causing the overall major gravity low. It is most likely that these sediments extend some distance to both the east and west of this line of holes, since the gravity low has a width of approximately 500–600 m. The remaining hole, drilled into a subsidiary gravity low immediately to the north of this line, also intersected crater facies sediments, probably continuous with those to the south. All of the holes were terminated in basement rocks, indicating that



Map showing location of Tsodilo project area in Botswana.

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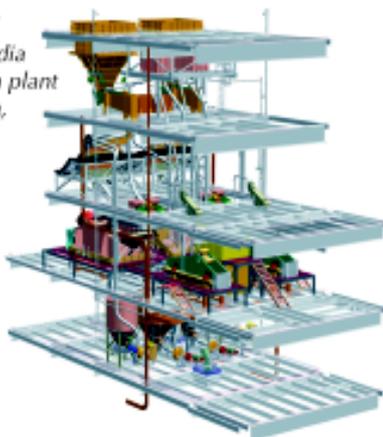
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James Bruchs, the CEO of Tsodilo, examining a kimberlitic ilmenite grain held by Technical Director, Dr Andy Moore.

A37 has a relatively flat champagne glass shape, similar to the Australian lamproites.

These results, coupled with the gravity data, indicate that A37 has a large surface area of the order of 80-100 hectares. While further drilling is required to delineate the extent of the body with greater accuracy, the available data indicate that A37 is the second or third largest known kimberlite, by surface area, in Botswana.

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The A37 gravity low is associated with two prominent bulls-eye ground magnetic anomalies, and a number of very subtle positive magnetic features. This evidence may indicate that there were several kimberlite feeder pipes, with concentrated volcanic activity over a relatively small area, which appears to be a characteristic of the world's large economic kimberlites. The champagne glass shape of the A37 body suggests that, as in the case of the Australian lamproites, it was probably formed as a result of phreatic explosive activity, i.e. a volcanic explosion triggered when the hot magma reacted with groundwater. It should be noted that the surface emplacement of a number of the world's very high grade kimberlites appear to have involved similar phreatic eruptions. While the reason for this empirical observation is not well understood, it is speculated that it could be linked to rapid cooling of the magma, resulting in only very limited low-pressure diamond resorption.

Three holes were drilled on the target designated A38 where Kalahari cover is relatively thin (35-45 m). All holes terminated in basement dolomite without intersecting kimberlite. The source of the A38 coincident magnetic and gravity anomalies remains unexplained and requires further investigation, particularly as it is in close proximity to the A37 kimberlite crater.

Further drilling of the two kimberlites is planned as well as extending the kimberlite search to other promising areas in both the Newdico and Gcwhaba licence areas.

James Bruchs, CEO of Tsodilo comments "There is a very strong parallel between the current exploration situation in northwest Botswana and that in Canada just prior to the discovery of the diamondiferous Lac de Gras kimberlites. Our drilling results have demonstrated that the Nxau Nxau field is larger and more promising than believed by previous workers." **MRA**

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