Adelaide Resources notes with interest the recent widespread national and international media coverage of cutting edge research conducted by a CSIRO team led by Dr Mel Lintern into the use of biogeochemistry in mineral exploration. One of the research sites investigated in the study by Dr Lintern’s team was Adelaide Resources’ Barns gold prospect, located north of Wudinna on the Company’s Eyre Peninsula Project (Figure 1).

The use of biogeochemistry in mineral exploration is an emerging field that shows exciting potential to become a valuable new exploration method that can complement the existing conventional geochemical and geophysical tools available to mineral explorers.

In essence, Dr Lintern’s work has confirmed that some species of eucalypts growing on top of mineral deposits like Barns, transport gold from significant depths via the root system and deposit it as tiny particles in the above ground foliage of the tree. It is then possible to sample leaf and twig material, determine its gold content, and delineate biogeochemical anomalies that may indicate the presence of buried mineralisation.

Historically, Adelaide Resources’ exploration on the Eyre Peninsula Project employed calcrete geochemistry to define gold anomalies, a technique that involves sampling and assaying of carbonate commonly present in the soil profile. Calcrete geochemistry, also developed initially by CSIRO researchers, found widespread application in mineral exploration from the late 1980’s, and was introduced to South Australia by Dr Kevin Wills, a former director of Adelaide Resources.
Drill testing of calcrete geochemical anomalies on the Company’s Eyre Peninsula Project led directly to the discovery of the Barns, Baggy Green and White Tank deposits, all of which remain 100% owned by Adelaide Resources. The Challenger Gold Deposit, located further northwest in South Australia and currently being mined by Kingsgate Consolidated Limited, was also discovered using calcrete geochemistry.

Highly significant intersections of gold were made at each of Adelaide Resources’ prospects, including 88.6 metres at 1.25g/t gold (Barns), 24 metres at 2.33g/t gold (Baggy Green), and 17 metres at 3.47g/t gold (White Tank). Adelaide Resources’ recent focus has been on its successful search for copper-gold deposits on the Moonta Project, however the Company remains mindful of the high mineral potential of the Eyre Peninsula Project.

The Barns calcrete geochemical anomaly, together with an aerial photo of the prospect, is shown on Figure 2. The paddocks have largely been cleared for cereal cropping, however Dr Lintern’s team was able to sample native vegetation that remained on the crest of a sand dune that crosses the prospect.

Figure 2: Barns Prospect calcrete gold geochemistry.

While calcrete geochemistry has been very successfully used by the Company on the Eyre Peninsula Project in the past, its application is limited to areas where the critically important carbonate layer is present in the soil profile. There remain large areas on the Company’s project, totalling over 500 km², where calcrete is either not developed in the soil profile, or is present at a depth below that which can be cost efficiently sampled using hand tools. These low-carbonate areas, shown on Figure 3, represent areas that are considered to be highly prospective for gold, but where the Company’s past calcrete exploration is considered likely to have been ineffective.

The soils in the low-carbonate areas are very sandy and were considered to be of little value to the early agriculturists who cleared the mallee scrub and started farming in the district. Consequently, eucalypt dominated native vegetation remains intact over the vast majority of the low-carbonate areas, presenting the possibility of using biogeochemistry as an alternative, cost efficient and environmentally innocuous exploration technique.
Some months ago, mindful of the advances being made in biogeochemical exploration research, the Company commenced the process of gaining the various approvals required to access parts of the low-carbonate area to conduct its own research trial into the development of biogeochemistry. If successful, a broader application of biogeochemistry could revolutionise the future search for mineral deposits in the area. The approvals process is now well advanced and the Company is hopeful of commencing this study in the near future.

Chris Drown
Managing Director

The information in this report that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Chris Drown, who is a Member of The Australasian Institute of Mining and Metallurgy and who consults to the Company on a full time basis. Mr Drown has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration, and to the activity which he is undertaking, to qualify as a Competent Person as defined in the 2004 Edition of the ‘Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves’. Mr Drown consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

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