Lake Lefroy Terrestrial Invertebrate Monitoring Program

St. Ives Gold Mining Ltd

CLIENT:

St Ives Gold Mining Ltd

LOCATION:

Lake Lefroy – Kambalda (Goldfields)

SERVICES:

- Terrestrial invertebrate monitoring of riparian zone including all taxonomic services
- 1:100 year flood aquatic invertebrate response program

KEY ACHIEVEMENTS:

- Completed a comprehensive review of the existing *Beyond 2010* terrestrial invertebrate monitoring program
- Identified six key indicator groups that best suit the objective of monitoring ecological health at the lake
- Completed the 2013 survey at ~30% below the 2010 – 2012 costs

Phoenix undertook a comprehensive review of the *Beyond 2010 Lake Lefroy Terrestrial Invertebrate Monitoring Program* and made significant modifications to better meet the objectives of the program, but targeting a suite of suitable indicator species, while achieving substantial cost savings.

The objective of the *Beyond 2010 program* is to assess the ecological health of Lake Lefroy through monitoring of target invertebrate fauna and flora communities.

In October 2013, Phoenix was commissioned to undertake a comprehensive review of the *Beyond 2010 program*. Through the use of specific indicator groups for the riparian vegetation and the playa, Phoenix proposed a more focussed, streamlined and cost-effective methodology to achieve the program objectives.

Where previously all invertebrate groups had been identified to species level (at considerable cost), Phoenix recommended the program be restricted to just three indicator groups that provided the best indicator of ecological health in the riparian zone: ants (Hymenoptera: Formicidae); bugs, leafhoppers and allies (Hemiptera); spiders (Araneae). In addition to these groups playa specialist species were also included: wolf spiders (Lycosidae); tiger beetles (Carabidae: Cicindellinae) and crickets (Orthoptera). Short-range endemic invertebrates (SREs) also remain a target to assess Lake Lefroy as refugium of range-restricted species that may be impacted by proposed future developments.

The new suite of indicator species will allow for a much more informative annual program that can be used by a range of companies operating in and around Lake Lefroy.

In November 2013, Phoenix was subsequently commissioned to enact the revised terrestrial invertebrate monitoring program

PHOENIX
ENVIRONMENTAL SCIENCES