## Geothermal Stimulation & Porosity – Student Activity



We can get heat energy from underground by tapping into natural hot water that lies in rocks below us or by introducing cold water into these hot rocks and returning it to the surface to drive turbines to produce electricity. Water will only move through *permeable* rock.

### Porosity and permeability

What is meant by the porosity of rock? \_\_\_\_\_

Name a porous rock

What is meant by a permeable rock?

Name a rock that is both porous and permeable \_\_\_\_\_

Why do you think there is a picture of Tim Tams and an Aero bar below?

Materials

- One Aero chocolate bar portion
- One Tim Tam biscuit
- Milk or water in a Petri dish or flat dish



#### Tim Tam

Bite the ends (or opposing corners) from a Tim Tam to remove the chocolate outer seal. Hold it between your lips and try and breathe through it. Does the Tim Tam let air (gas) pass through?

Geothermal Stimulation & Porosity – Student Activity



Attempt to suck milk from the glass through it. (Use the Tim Tam as a straw). Does the liquid pass through the biscuit?

### Aero

Bite the ends off an Aero bar. Hold it between your lips and try and breathe through it. Does the Aero let air (gas) pass through?

Attempt to suck milk from the glass through the Aero. Does the liquid move through?



Section through Tim Tam above and Aero below

Which is porous, a Tim Tam or an Aero? \_\_\_\_\_

Which is permeable, a Tim Tam or an Aero? \_\_\_\_\_\_

If you left a piece of Aero and a piece of Tim Tam in a glass of milk, which would soak up the greatest volume of milk. Explain your answer.

# Geothermal Stimulation & Porosity – Student Activity



Porosity and permeability are important to permit movement of hydrocarbons (oil & gas) to reservoirs and the formation of underground water reservoirs within rock. Revisit the first question (copied below) and see if you can write an answer that relates the bar and the biscuit to obtaining geothermal power from rocks.