GLY 254 STRUCUTRAL GEOLOGY
PRACTICAL TEST
STEREOGRAPHIC PROJECTIONS
8-30 – 9-20, Tuesday 18th March 2008

Answer all questions.
Time allowed: 50 minutes

YOU will need: Schmidt Stereonet, Drawing Pin, Pencils and coloured pencils.
PROVIDED: Tracing Paper

You have been asked by a mining company to compile a report on the geometry of a saddle reef ore deposit. A saddle reef ore deposit typically forms along the hinge line of a fold, where tension fractures allow ores to be precipitated from mineralised hydrothermal fluids (see Figure 1). As head of the project, you despatched your staff to prepare a geological map of the project area, including a record the orientations of bedding planes. The map shows that dominant lithologies in the area are Ordovician limestone, which host the ore bodies, overlain by Cretaceous sandstone.

The compiled map is shown below in Figure 2:

A. Plot the poles to bedding for the *Ordovician* strata, construct a π-circle and determine the fold axis of the fold using the available bedding data.

(40 marks)

B. Answer the following questions:

1. Is the fold a cylindrical fold? What factor determines your answer?
Yes it cylindrical, because most or les all the poles fall on the π circle, and even the ones that are'nt on the π circle they are still top close that it might have been calculat
(5 marks)

2. If the reefs exposed at the surface are to be mined, at what orientation should a tunnel be dug to follow the line of the reefs at depth?
The tunnel should be dug along the hinge line which have the same orientation as the fold axis 218° ⇒ 28°
(10 marks)

3. Label the poles of the East and West limbs on your stereonet. What is the approximate inter-limb angle?
The interlimb angle is at 92°
(10 marks)

4. Use the stereonet to give an approximate orientation of the axial plane of the fold.

(10 marks)