EARTH 471: Laboratory 5 – Orogenic Gold

In groups of 3 or 4, complete exercises 1, 2 and 3. Before the beginning of the next lab session, your team must hand in exercises 1, 2 and 3 (hard copy preferred) to either the instructor or the teaching assistant. See the sample description forms on the LEARN site for what information to include in your sample descriptions.

Exercise 1: Describe one hand sample from each of the 4 groups.

Group 1:
E40-10, E112-3

Group 2:
E17-1, E12-3, E17-16, E17-4

Group 3:
E22-4, E40-2

Group 4:
E22-8

Exercise 2: Describe one polished section from each of the following three groups.

Group 1:

B62, A220, A219, A25

Group 2:

137, A153, 235, A490, 130, A156

Group 3:

A129, A450, A130, A127, A132, A399, A131, A249

Exercise 3: Questions

1. In your sample from group 1 (Exercise 2), approximately what percent of the puck is gold? Would this be considered high grade gold ore? What is the approximate gold grade in ppm? Assume volumetric percent equals weight percent (1 weight% = 10000 ppm)

2. What minerals from groups 2 and 3 from Exercise 2 (pucks) have environmental implications during the mining process and briefly explain why.

Notes for this lab:

Important ore minerals:

- Pyrrhotite
- Pyrite
- Chalcopyrite
- Sphalerite
- Gold

Arsenopyrite
Stibnite** (a new mineral this week)
Tetrahedrite (trace amounts in a few samples)

Important alteration minerals:

Quartz
Fuchsite
Chlorite
Talc
Sericite
Carbonates