**How you’ll use it**

You have just studied Pauling’s Rules, which allow you to evaluate how various elements may or may not partition into a given crystal structure.

Now, consider the case that you are an Environmental Scientist working for a governmental agency (who also employs Geologists, Health Scientists and Risk Assessment managers) that is tasked with assessing risk from toxic chemical spills. A community was concerned about a local spill and a lab has recently determined that radioactive strontium (90Sr) is in their groundwater that is tapped from three different wells, W1, W2 and W3. A Geologist has determined that the groundwater in W1 is dominated by sandstone that is almost pure quartz; W3 is also sourced in sandstone, but the sandstones consists of an equal mixture of quartz and feldspar. A third well, W2, is sourced in limestone, which consists mostly of calcite. The community can treat only a limited amount of water; which well or wells, would you expect to contain the least amount of 90Sr, or will they all be equally contaminated. Also, community members are interested in how long the levels of radioactivity in their groundwater will be elevated over the pre-spill levels.

Write a very brief report (200-300 words) that presents your analysis and conclusions. The report will consist of three parts: 1) A sentence that introduces the problem; 2) A Methods Section where you will explain your approach and show the calculations that lead to your results and support your conclusions; 3) A Conclusions sentence, that explains your findings and recommendations to your Health Science and Geologist colleagues. See the grading rubric that will be used to evaluate your report.