This study describes a method of sampling water from individual fractures in bedrock wells by altering flow in the well using a single pump to isolate fractures of interest. Sampling procedures are described conceptually for nine wells with varying flow conditions containing one, two, or three inflow zones, and demonstrated in two wells containing one and two inflow zones. The sampling technique described here can be a low-cost addition or alternative to traditional methods of groundwater sampling. It can provide information for long-term monitoring, particularly where permanent or long-term multi-level sampler installation may not be feasible.