There is increasing interest in measuring water in air at low ppm levels.

We configured an SRI 8610C GC with Helium Ionization Detector (HID) and a 2 meter Haysep-D column. Oven temperature was set to 80°C.

The chromatogram at right shows 1ul of room air. We calculated that room air contained about 21000 ppm of water, so a 1 ul injection should contain the same amount of water as 1 ml injection at 21ppm.

We then switched to a 15meter RTX Q-plot column and injected 1ul of room air. The Q-plot results were slightly better because of the sharper peak shape.

Finally we inserted a empty syringe into the injection port and saw a smaller water peak that we believe is the equivalent of 6ppm water. Notice that the air peak is drastically smaller.