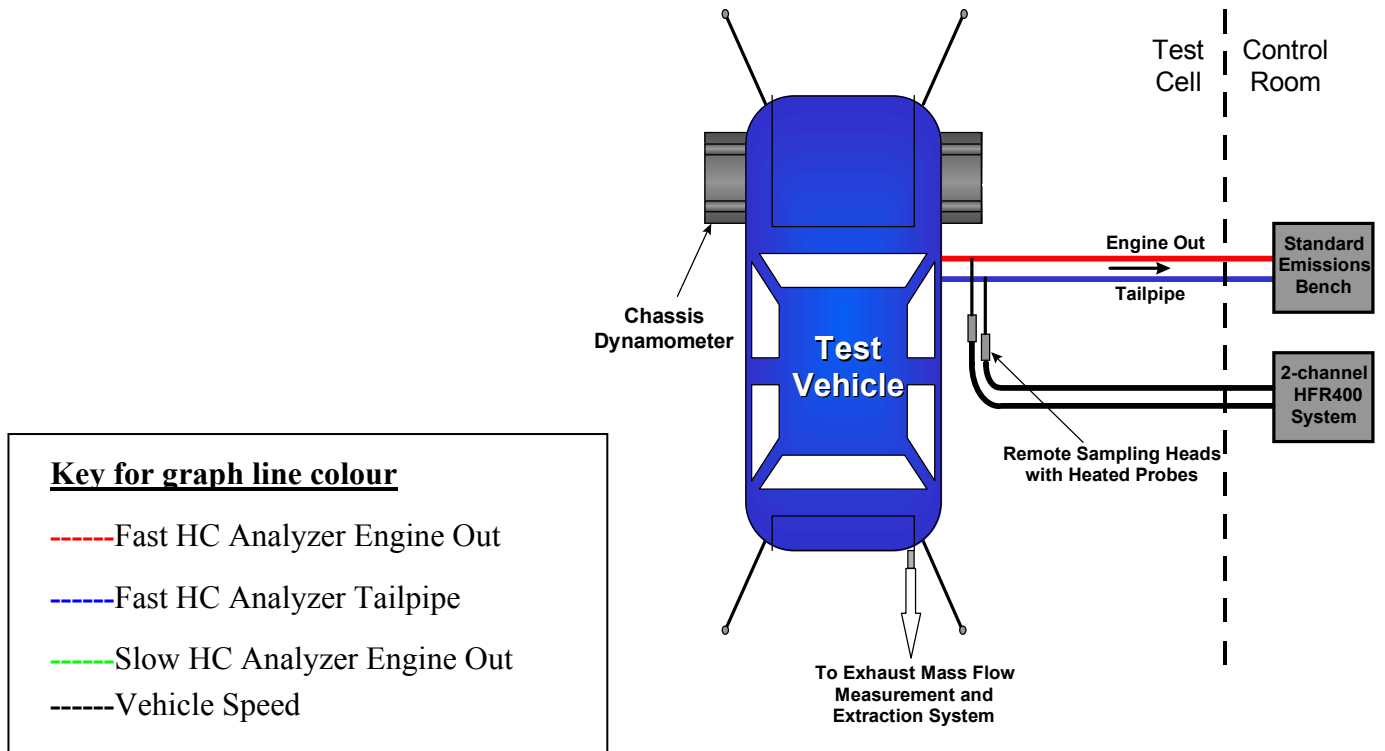


*Suggested Application: Transient catalyst performance, transient fuelling calibration, cold start fuelling strategy development, general vehicle emissions*

## Fast FID measurement of pre- and post-catalyst HC concentrations

1.8 litre Production Gasoline Engine



### Explanatory Notes for data

The resolution of fast transient engine HC emissions is clearly more detailed than the slow analyzer measuring the same engine-out gas.

The cold start [HC] of 18,000ppm C3 cannot be detected using the slow analyzer and negative catalyst efficiency is evident as the catalyst brick desorbs HCs at approximately 5s.

Spikes on the HC traces show where transient engine fuelling requires refinement and the periodic oscillation in engine-out HC appearing at 275s reflects the perturbations in AFR from the EGO feedback control.