



See What's Really There™

NEW VACUUM EXTRACTION TECHNIQUES FOR GCMS BREATH ANALYSIS



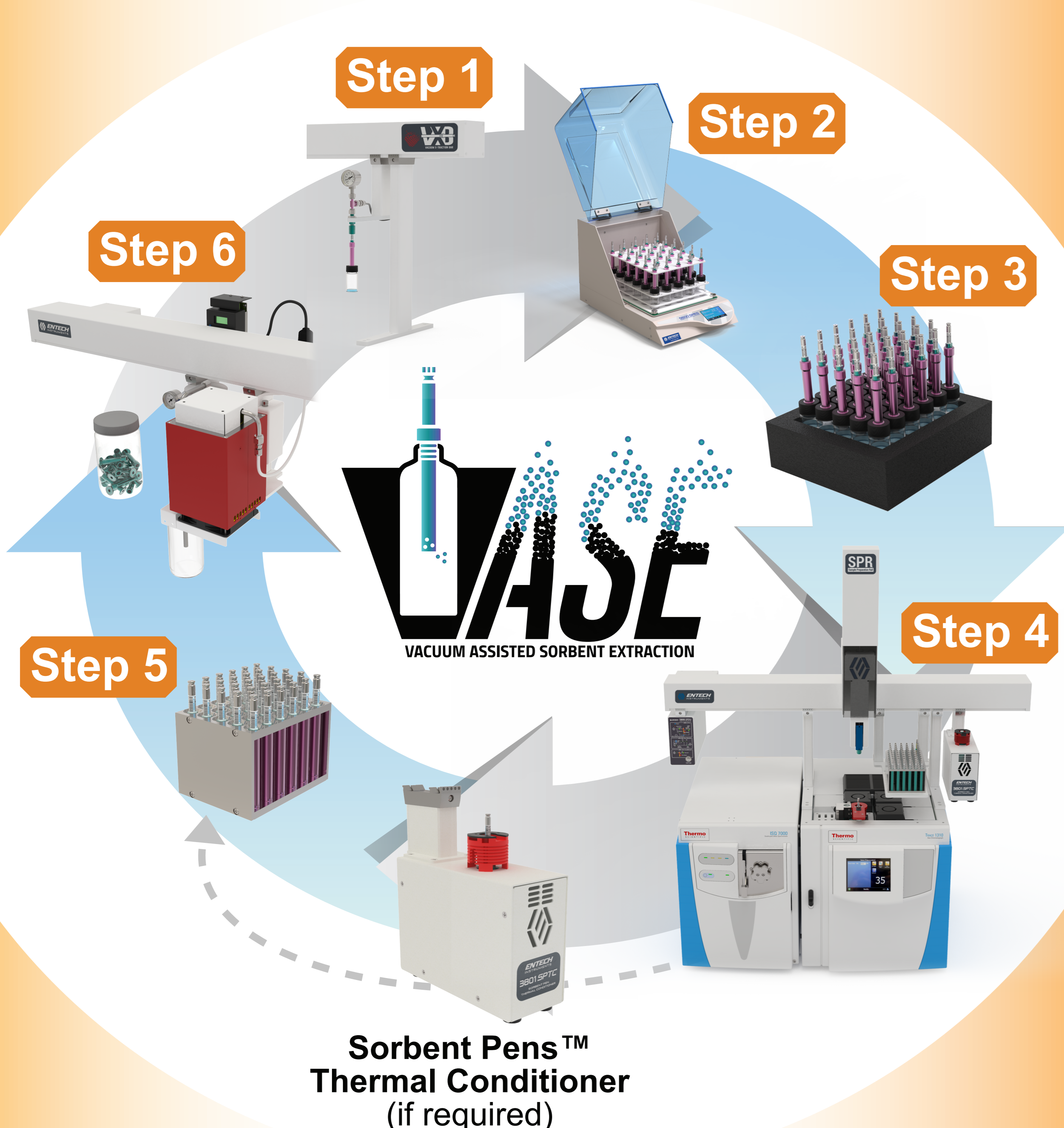
Oral-BCVE



Breath-ILL-izer

Oral Breath Condensate Vacuum Extraction

Simple oral rinse shows accumulation of VOCs/SVOCs saturated in oral cavity due to normal respiration



Step 1 Perform oral rinse with 10mL of water, and deposit into disposable cup

Step 2 Transfer 5cc into 20mL vial, attach vacuum sleeve and Sorbent Pen, and create a vacuum on the vial until reaching the vapor pressure of the rinse (20 seconds)

Step 3 Place assembly in an agitator and heat from 30° to 70° C for several hours to reach equilibrium or exhaustive extraction

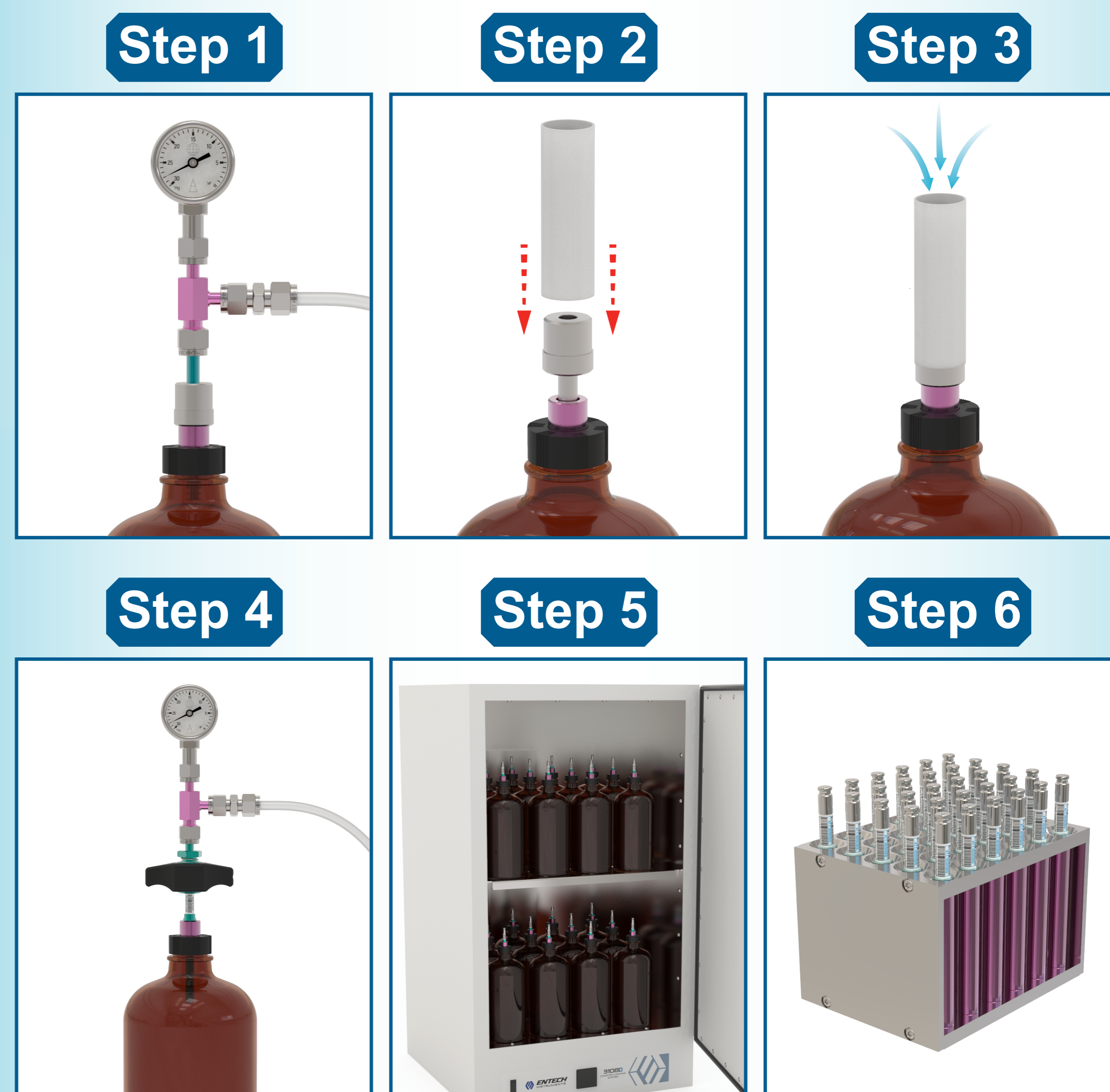
Step 4 Remove assembly that is still under vacuum, and chill bottom of vials to draw all excess water out of Sorbent Pens, to prevent any negative effects in the GCMS

Step 5 Desorb samples using 5800 SPDU to deliver quantitatively into a GCMS

Step 6 Clean Vacuum Sleeves Prior to Reuse

Efficient Collection of all VOCs through SVOCs, Followed by Unique 2-Stage Extraction

- Complete recovery of compounds both in the gas phase and contained in droplets
- Prevents transmission of Non-Volatile compounds to the thermal desorption device (Sorbent Pen™) to eliminate artifact formation
- Totally inert, non-absorptive container ensures complete recovery of all GC compatible compounds
- No other whole breath technique recovers more compounds over a wider vapor pressure range



Step 1 Evacuate sampler and then isolate vacuum by pulling up on inlet

Step 2 Add disposable mouth piece, and blow into inlet to remove initial 10-20% of breath

Step 3 Push down on mouth piece/inlet to collect sample. Rapid transfer of breath into sampler allows for efficient transfer of VOCs and SVOCs contained in water droplets/aerosols

Step 4 Replace inlet with Sorbent Pen, and pull a vacuum through the Pen to collect VOCs "Dynamically"

Step 5 Leave under vacuum and heat to recover SVOCs "statically" through diffusion to the Pen while maintaining a closed system

Step 6 Remove Pen for GCMS analysis