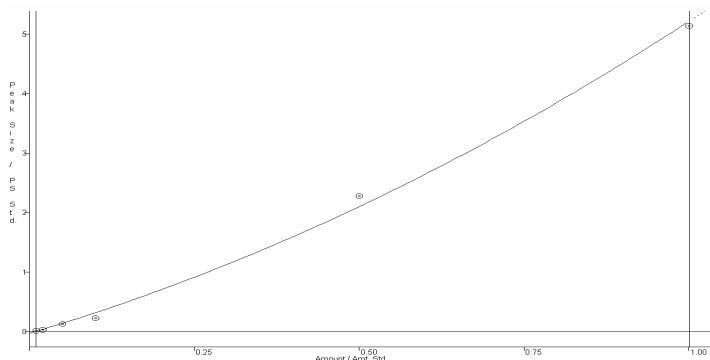
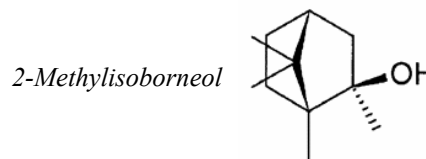
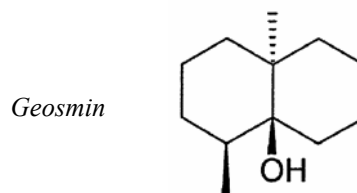


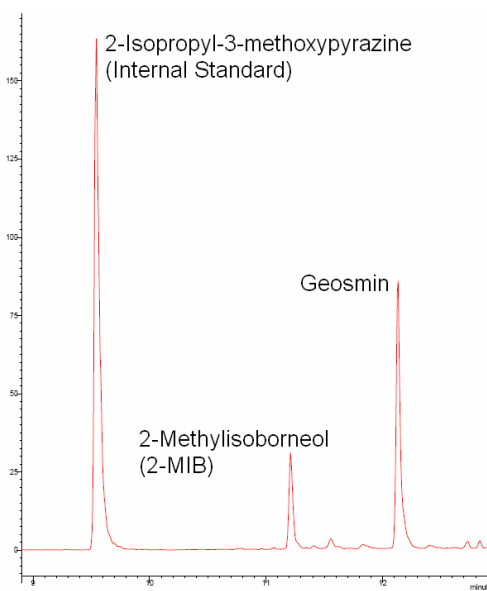


## Determination of Geosmin and MIB in Water

Geosmin and 2-Methylisoborneol (2-MIB) are two of the most commonly occurring chemicals attributed to the unpleasant taste and odor characteristics of drinking water. In addition to water, they also contribute to a distinct earthy taste in wine and certain fish species. These compounds are primarily formed intracellularly in blue-green algae (cyanobacteria) and actinobacteria, and are released upon cell destruction. Although taste and odor problems are not considered a direct threat to public health, they are of great concern for many water utilities because consumers generally rely on the taste of their water as the primary indicator of its safety. Since the human nose is able to detect these compounds at low concentrations—as low as 10 ng/L (ppt), the need to identify these compounds at lower levels is an important priority. With this in mind, Weck Laboratories has developed a sensitive and robust analytical method for the quantitation of Geosmin and 2-MIB using the latest GC/MS technology, incorporating state-of-the-art automated solid phase micro-extraction (SPME) in conjunction with target-specific chemical ionization tandem mass spectrometry (CI-MS/MS). With the implementation of this method, Weck Labs is able to detect these compounds below human sensory thresholds and has established a reporting limit of 1 ng/L for both Geosmin and 2-MIB.



Geosmin, 1-100 ppt,  $r^2=0.998$



Geosmin and 2-MIB, 10 ppt

Analyte	MDL <sup>(1)</sup> (ng/L)	RL <sup>(2)</sup> (ng/L)	Accuracy		Precision	
			Mean (%)	Acceptance <sup>(3)</sup> (%)	RSD (%)	Acceptance <sup>(3)</sup> (%)
Geosmin	0.22	1	101	70-130	8.5	<20
2-MIB	0.33	1	109	70-130	10.3	<20

Notes: (1) Calculated Method Detection Limit using the procedure described in 40CFR Appendix B  
 (2) Reporting Limit  
 (3) Temporary limits until lab generated acceptance limits based on historical values are established