



# CANNABIS TESTING SOLUTIONS MATRIX

	BREATH		ORAL FLUID		URINE		HAIR
	LAB-BASED	ON-DEMAND	LAB-BASED	ON-DEMAND	LAB-BASED	ON-DEMAND	LAB-BASED <sup>1</sup>
<b>Collection Process</b>	Donor breathes into handheld cartridge in view of collector		Donor places collection device in mouth in view of collector		Donor provides urine sample in secured restroom Federally mandated safety-sensitive (FMSS) may have additional requirements		Collector cuts 100 - 120 strands of hair
	System automatically captures standardized breath sample in single-use cartridge		When collection is complete, collection pad is placed into transport tube containing buffer	When collection is complete, collection swab is removed from the mouth	Collector pours sample into bottle(s)	Process varies based on device used	Collector folds foil around hair sample and places sample in laboratory envelope
	Collector removes enclosed tamper-evident cartridge and scans sample ID		Cap closed and tube sealed with tamper-evident seal	Collection swab placed into device and fluid expressed for on-site analysis	Bottle sealed with tamper-evident seal	Container with sample is sealed with tamper-evident seal (depends on device)	Hair envelope sealed with tamper-evident seal
	Complete Chain of Custody (CCF)		Complete CCF		Complete CCF		Complete CCF
<b>Sample Analysis</b>	Cartridge with sample sent to lab for testing	System processes sample and displays objective, instrument-read result on-screen; administrator interpretation not required	Sample sent to lab for testing	Administrator interprets instant test result	Sample sent to lab for testing	Administrator interprets instant test result	Sample sent to lab for testing
<b>Collection Time</b>	2-3 minutes		3-10 minutes		15+ minutes		5-10 minutes
<b>Sample Validity</b>	Automated + observed collection		Observed collection		Typically unobserved collection		Observed collection
<b>Standard THC Cut-Off Levels<sup>2</sup></b>	Screen: 20 pg/mL Confirm: 20 pg/mL		Screen: 3-4 ng/mL Confirm: 1.5-2 ng/mL	Screen: 40 ng/mL	Screen: 50 ng/mL Confirm: 15 ng/mL	Screen: 50 ng/mL	Screen: 1 pg/mg Confirm: 0.1 pg/mg
<b>Window of Cannabis Detection</b>	Detection of THC molecule immediately after use for up to 3 hours to reflect workday use		Detection of THC molecule in oral cavity immediately after use for up to 72 hours		Detection of THC metabolites starting 7+ days after use and for up to 30 days		Detection of THC metabolites 7-14 days after ingestion for up to 3 months
<b>Average Turnaround Times</b>	On-Demand results typically within 20 minutes. Lab-based screen results typically within 24 hours of lab receipt. Sample requiring confirmation typically within 96 hours of lab receipt. <sup>3</sup>						
<b>Sample Type Considerations</b>	<p><b>Benefits</b></p> <ul style="list-style-type: none"> <li>+ Designed specifically for the era of legal cannabis use</li> <li>+ Shortest window of detection demonstrates proximate use to the workday and maintains employee privacy</li> <li>+ Aligns with emerging state legislation – only detects THC molecule</li> <li>+ Does not detect THC oral cavity contamination</li> <li>+ Does not detect THC metabolites</li> <li>+ Automated + standardized sample collection limits human error</li> <li>+ Cartridge design reduces probability of tampering and cheating</li> <li>+ Instrument-read results of on-demand tests help ensure objectivity</li> <li>+ Facilitates paperless process</li> <li>+ Seamless integration with online portal to track all results</li> <li>+ Observed collections prohibit tampering and cheating</li> </ul> <p><b>Considerations<sup>4</sup></b></p> <ul style="list-style-type: none"> <li>• Limited to cannabis testing only</li> </ul>		<p><b>Benefits</b></p> <ul style="list-style-type: none"> <li>+ Observed collections prohibit tampering and cheating</li> <li>+ Allows simultaneous testing of cannabis and other drugs</li> </ul> <p><b>Considerations</b></p> <ul style="list-style-type: none"> <li>• Developed pre-cannabis legalization for the era of zero tolerance</li> <li>• Windows of detection extend beyond the workday risking job loss for legal choices, thereby increasing hiring + training costs</li> <li>• Human interpretation of on-site results creates potential for bias</li> <li>• Limited THC sensitivity in On-Demand products</li> </ul>		<p><b>Benefits</b></p> <ul style="list-style-type: none"> <li>+ Most commonly used sample type for workplace drug testing</li> <li>+ Broadest range of drug testing panels</li> <li>+ Only testing method approved for federally-mandated testing</li> </ul> <p><b>Considerations</b></p> <ul style="list-style-type: none"> <li>• Developed pre-cannabis legalization for the era of zero tolerance</li> <li>• Collection rarely observed, increasing likelihood of adulteration</li> <li>• Windows of detection extend beyond the workday, risking job loss for legal choices and increasing hiring + training costs</li> <li>• Human interpretation of on-site results creates potential for bias</li> <li>• Low tech solution requires manual tracking of results</li> <li>• May not meet requirements of new state laws; only detects THC metabolites</li> <li>• Typically requires a restroom and may require a same-gender collector</li> <li>• Some donors find invasive</li> </ul>		<p><b>Benefits</b></p> <ul style="list-style-type: none"> <li>+ Longest detection window; typically returns more positive results</li> <li>+ Detects long-term pattern of repetitive use; ideal for illegal drugs and zero-tolerance programs</li> <li>+ Observed collections prohibit tampering and cheating</li> </ul> <p><b>Considerations</b></p> <ul style="list-style-type: none"> <li>• May not meet requirements of new state laws; only detects THC metabolites</li> </ul>

<sup>1</sup> Hair samples tested only in lab setting and not available as On-Demand tests.

<sup>2</sup> Varies depending on device. Breath cut-off measured in picograms (parts per trillion); one billion times more sensitive than nanograms. Oral fluid and urine cut-offs measured in nanograms, 1 billion times less sensitive than picograms.

<sup>3</sup> Most employers require confirmation of non-negative results from on-demand and lab-based screening.

<sup>4</sup> For employment, law enforcement, and insurance use only. Not for any medical or therapeutic use.