

VACUUM SYSTEM DIAGNOSTICS & TROUBLESHOOTING CHECKLIST

Field & Lab Anomaly Audit Form — Form CHK-DIAG-2021-19

Work Order #: WO-2021-9012	System / Asset ID: VAC-BAY-02	Inspection Date: Dec 30, 2021
Lead Tech: Kadeem Manning	RGA S/N: RGA-200-99	Pirani Gauge: PG-401-OK

#	Diagnostic Step & Action Criteria	Target Spec / Threshold	Measured Result	Status
1	Standalone Roughing Pump Base Vacuum	< 100 mTorr (<10–20 μ m)	45 mTorr	PASS
2	Main Chamber Door O-Ring Inspection	Clean, lint-free, IPA wiped	Cleaned & seated	PASS
3	RGA Water vs Air Peak Evaluation	m/z = 18 vs m/z = 28/32 ratio	m/z = 18 dominant	PASS
4	Chamber Bake-Out Execution	100°C–150°C for 4–8 hours	Executed 120°C 6h	PASS
5	Virtual Leak Screws Audit	Center-drilled vented screws in blind holes	Vented screws verified	PASS
6	Helium Spray Leak Audit (SOP-LEAK-2021-18)	< 5.0e-9 mbar.L/s (UHV)	1.2e-10 mbar.L/s	PASS
7	Turbopump Rotor Speed & Power	100% nominal RPM, normal watts	100% RPM (60,000)	PASS
8	Cooling Water Flow Audit	$\geq$ 1.5 gpm flow rate	1.8 gpm	PASS
9	Exhaust Mist Filter Differential Pressure	< 0.5 bar (7 psi)	0.18 bar	PASS
10	Motor Full Load Amperage (FLA) Audit	Within $\pm$ 5% nameplate FLA	4.1 A (FLA 4.2 A)	PASS
11	5-Min Vacuum Decay Rate-of-Rise	< 5% total volume / min	1.2% / min	PASS
12	Anti-Suckback Valve Response	< 20 ms closure on power cut	14 ms	PASS
13	Single-Line Hardbound Logbook Entry	Quantified parameters recorded	Logged Page 52	PASS
14	CMMS WO PDF Upload	300 DPI PDF attached	Attached	PASS

Diagnostic Findings & Action Summary: Chamber stall at 10-4 Torr was isolated to water outgassing. Completed 120°C 6-hour bake-out. Base vacuum restored to 2.4e-7 Torr. System released for processing.

Inspected By: Kadeem Manning Tier II Vacuum Lab Technician	QA Approved By: Genevieve Lariviere QA Program Manager
Signature: <i>Kadeem Manning</i>	Signature: <i>Genevieve Lariviere</i>
Date: Dec 30, 2021	Date: Dec 31, 2021