Report By:

National TAB
1329 E. KEMPER ROAD
SUITE 4210
CINCINNATI, OH 45246

Report: TAB Report

Function: Test, Adjust, & Balance

Date: 10/23/2025

Completed By: National TAB

PROJECT

02-02-26 QT #1447 LAVEEN, AZ

6705 W BASELINE RD

LAVEEN, AZ 85339

Client

QUIKTRIP

4705 SOUTH 129TH EAST AVENUE

TULSA, OK 74134

National TAB

Project: 02-02-26 QT #1447 LAVEEN, AZ

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Project Summary

Project Summary
The summary below provides a quick understanding of our scope of work and general testing procedures. Enclosed in the report are further details about your building performance including recommendations, asset data, and pictures. Our focus is to work with the trades to remedy any issues or deficiencies during the actual field balancing and not after the balancing has occurred to achieve a positive environment and outcome. The level of success is determined by the availability of the trades, possible parts needed, or time constraints.

RTU's (Roof Top Units)
Each of the RTU's was measured with a flow hood to establish total flow. The total flow was then adjusted via the VFD so that airflow fell within design tolerances. All diffusers on the kitchen RTU were balanced to the engineer's design flow. The diffusers on the sales floor were only adjusted when there were noticeable issues present like drafting or dampers that were found completely closed. The Hoods On outside air rate was set by first establishing the typical QT set point at the Emerson controller and then making manually adjustments on the roof. The hoods off airflow setpoint was found by adjusting the damper position at the Emerson controller until the design airflow was achieved. Outside air was measured by reading the intake air opening with a velocity grid and multiplying by the free area. After completion of TAB all overrides were released.

Kitchen Exhaust Hood & Associated Fans
The kitchen exhaust fan was measured at the hood filter bay utilizing a velocity matrix and a manufacturer's correction factor. Each filter velocity is multiplied by the manufacturer's corrected area. The sum of these readings equals the total flow of the exhaust fans. The total flow of the exhaust was then adjusted to within tolerance of the design flow.

Restroom Exhaust Fans
The restroom exhaust fans were measured with a flow hood. The total flow was balanced for the fan with the exception of the new grille over the combi-oven, which was balanced to the listed design.

Final Building Tests
After completing the test and balance the final building pressure was measured. It was confirmed that the building pressure fell within acceptable tolerances and that the pressure measurement coincides with the actual and design net airflow. Any deviations from these standards are noted throughout the report. The hood capture was tested at the perimeter of the hood and the cook top level with the equipment heat on to ensure satisfactory hood capture and containment.

NATIONAL TAB

AIR BALANCE SCHEDULE

UNIT	AREA SERVED	HOOD ON OA		HOOD OFF OA		HOOD ON EXHAUST		HOOD OFF EXHAUST	
		DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL
RTU 1	SALES	800	790	350	336				
RTU-2	SALES	800	804	350	343				
RTU-3	BOH/KITCHEN	800	838	350	371				
EF-1	RR/JANITOR					750	764	750	764
EF-3	HOOD					1350	1460	0	0
TOTALS		2400	2432	1050	1050	2100	2224	750	764

HOODS ON

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	2400	2432
TOTAL EXHAUST	2100	2224
NET AIRFLOW	300	208

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.0217
SIDE	0.0046
REAR	0.0107
AVERAGE	**0.0123**

HOODS OFF

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	1050	1050
TOTAL EXHAUST	750	764
NET AIRFLOW	300	286

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.0187
SIDE	0.0065
REAR	0.0126
AVERAGE	**0.0126**

NOTES:

CheckList List

- 01: RTU’s/AHU’s
- 02: Exhaust Fans
- 03: Hoods
- 04: Final Tests

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CheckList Information

Name :	01: RTU’s/AHU’s	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	10/02/2025 - Trinity Dodds - National TAB		
Completed Date :	02/04/2026 - Ethan Van Orden - National TAB		

CheckList Item Details

RTU's/AHU's

Evaporator coils are clean?	Pass
Comment:	
Condenser coils are clean?	Pass
Comment:	
Gas piping is installed and valves are turned on?	Pass
Comment:	
Unit free of noticeable noise and vibration	Pass
Comment:	

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CheckList Information

Name :	02: Exhaust Fans	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	10/02/2025 - Trinity Dodds - National TAB		
Completed Date :	02/04/2026 - Ethan Van Orden - National TAB		

CheckList Item Details

EF's

Hinge kit installed installed on hood fan?	Pass
Comment:	
Flex conduit is long enough so that fan can be completely tilted back?	Pass
Comment:	
No major leakage around the fan base	Pass
Comment:	
Unit is free of noise and vibration	Pass
Comment:	

02-02-26 QT #1447 LAVEEN, AZ

CheckList Information

Name :	03: Hoods	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	10/02/2025 - Trinity Dodds - National TAB		
Completed Date :	02/04/2026 - Ethan Van Orden - National TAB		

CheckList Item Details

HOODS

Hood is free of alarms?	Pass
Comment:	
Hood is free of damage?	Pass
Comment:	
End panels are installed per prototype?	Pass
Comment:	

02-02-26 QT #1447 LAVEEN, AZ

CheckList Information

Name :	04: Final Tests	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	10/02/2025 - Trinity Dodds - National TAB		
Completed Date :	02/04/2026 - Ethan Van Orden - National TAB		

CheckList Item Details

FINAL CHECKS

HOOD CAPTURE TEST

List kitchen equipment turned on for testing

Comment:

FRYER

List smoke candle type used

Comment:

SMOKE BOMB

Smoke test capture % - Perimeter of hood

Comment:

100%

Smoke test capture % - Top of cooking surface

Comment:

100%

WITNESS

Date test was completed	02/04/2026

Comment:

TAB tech name / Firm

Comment:

Ethan V/NTI

Site super name / Firm

Comment:

Owner representative name / Firm (if Applicable)

Comment:

QT

BUILDING PRESSURE

Do actual net building airflow, design net building airflow, and pressure coincide? If not why? (All three should either be positive or negative)	Pass

Comment:

National TAB

Project: 02-02-26 QT #1447 LAVEEN, AZ

System/Unit: AHU/RTU

Asset: RT-1 AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	202304-ANEK27172
Model Num	RN-013-8-0-HA0A-152
Num OA Filters 1	1
OA Filter Size 1	45X22
Num Final Filter 1	2
Final Filter Size 1	44X20

Motor Data	
	Actual
Motor MFG	NL
Frame	NL
Horsepower	3
Motor Rpm	1760
Phase	3
Rated Voltage	209
Rated Amperage	10.6

Test Data		
	Design	**Actual**
SF CFM	4200	4193
SF RPM	-	1425
OA CFM (Hoods On)	800	790
OA CFM (Hoods Off)	350	336
RL Voltage	-	175@VFD
RL Amperage	-	8.6@VFD
VFD Max SetPt	-	48.6HZ
VFD Min SetPt	-	24HZ
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	26%

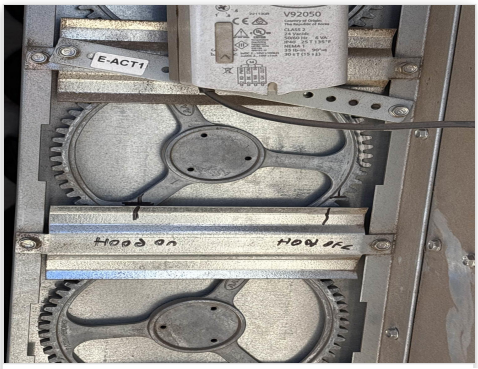
Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.59”
Fan Suction SP	-	-0.84”
Fan Discharge SP	-	0.67”
Total ESP	-	1.26"
Fan Total SP	-	1.51"

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	YES
Condensate Drain Installed	YES

Completed By: Ethan Van Orden on 02/04/2026

Unit Data - PHOTO LOG

02/04/2026



02/04/2026

National TAB

Project: 02-02-26 QT #1447 LAVEEN, AZ

System/Unit: AHU/RTU

Asset: RT-2 AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	202304-ANEK27171
Model Num	RN-013-8-0-HA0A-152
Num OA Filters 1	1
OA Filter Size 1	45X22
Num Final Filter 1	2
Final Filter Size 1	20X44

Motor Data	
	Actual
Motor MFG	NL
Frame	NL
Horsepower	3
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	10.6

Test Data		
	Design	**Actual**
SF CFM	4200	4383
SF RPM	-	1460
OA CFM (Hoods On)	800	804
OA CFM (Hoods Off)	350	343
RL Voltage	-	182@VFD
RL Amperage	-	8.6@VFD
VFD Max SetPt	-	49.8HZ
VFD Min SetPt	-	24HZ
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	21%

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.56”
Fan Suction SP	-	-0.83”
Fan Discharge SP	-	0.62”
Total ESP	-	1.18"
Fan Total SP	-	1.45"

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	YES
Condensate Drain Installed	YES

Completed By: Ethan Van Orden on 02/04/2026

Unit Data - PHOTO LOG

02/04/2026

02/04/2026

National TAB

Project: 02-02-26 QT #1447 LAVEEN, AZ

System/Unit: AHU/RTU

Asset: RT-3 AREA:BOH/KITCHEN

Unit Data	
	Actual
MFG	AAON
Serial Num	202304-ANEK27170
Model Num	RN-013-8-0-HA0A-152
Num OA Filters 1	1
OA Filter Size 1	45X22
Num Final Filter 1	2
Final Filter Size 1	44X20

Motor Data	
	Actual
Motor MFG	NL
Frame	NL
Horsepower	3
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	10.6

Test Data		
	Design	**Actual**
SF CFM	4200	4962
SF RPM	-	1302
OA CFM (Hoods On)	800	838
OA CFM (Hoods Off)	350	371
RL Voltage	-	147@VFD
RL Amperage	-	7.4@VFD
VFD Max SetPt	-	44.4HZ
VFD Min SetPt	-	24HZ
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	25%

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.47”
Fan Suction SP	-	-0.75”
Fan Discharge SP	-	0.36”
Total ESP	-	0.83"
Fan Total SP	-	1.11"

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	YES
Condensate Drain Installed	YES

Completed By: Ethan Van Orden on 02/04/2026

Notes:
Diffuser total doesn't match design. The diffuser total was followed.

Written By: Ethan Van Orden on 02/04/2026

Unit Data - PHOTO LOG

02/04/2026

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Project:02-02-26 QT #1447 LAVEEN, AZ

AHU/RTU

Diffuser Supply (GRD)

RT-3/BOH/KITCHEN

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	SUPPORT SERVICE	SI	12"	800	1	1183	1053	836	104.5
SGRD2	SUPPORT SERVICE	SI	12"	800	1	1022	924	858	107.3
SGRD3	SUPPORT SERVICE	SI	12"	800	1	1136	994	871	108.9
SGRD4	SUPPORT SERVICE	SI	12"	800	1	701	646	825	103.1
SGRD5	DOCK	ES	10"	500	1	521	444	512	102.4
SGRD6	WORKROOM	ES	10"	500	1	543	426	498	99.6
SGRD7	PLUMBING	ER	8"	540	1	543	439	562	104.1
Total				4740		5649	4926	4962	104.68%

Completed By: Ethan Van Orden on 02/04/2026

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Project: 02-02-26 QT #1447 LAVEEN, AZ

System/Unit: FAN - Exhaust

Asset: EF1 AREA:RR/JANITOR

Unit Data		
	Design	**Actual**
MFG	NA	CAPTIVEAIRE
Model Num	NA	DR50HFA
Serial Num	-	5920971
Type	-	DOWNBLAST
Configuration	-	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	NEMA
Frame	-	NL
Horsepower	-	0.500
Motor Rpm	-	2000
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	8.4
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	750	764
Fan RPM	-	NA
Fan Rotation	-	CCW
Motor RPM	-	NA
System SetPt	-	LOW
RL Voltage	-	114
RL Amperage	-	3.7
Total ESP	-	0.52”
Fan Inlet SP	-	-0.52”
Fan Discharge SP	-	ATMS

Completed By: Ethan Van Orden on 02/04/2026

Unit Data - PHOTO LOG

02/04/2026

National TAB

Project:02-02-26 QT #1447 LAVEEN, AZ

Diffuser Ret/Exh (GRD)

EF1/RR/JANITOR

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
EGRD4	SUPPORT SERVICE	RI	8"	150	1	139	139	139	92.7
Total				150		139	139	139	92.67%

Completed By: Ethan Van Orden on 02/04/2026

National TAB

Project: 02-02-26 QT #1447 LAVEEN, AZ

System/Unit: FAN - Exhaust

Asset: EF3 AREA:KITCHEN HD

Unit Data		
	Design	**Actual**
MFG	NA	CAPTIVEAIRE
Model Num	NA	DU50HFA
Serial Num	-	8257480
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	NEMA
Frame	-	NL
Horsepower	1/2	1/2
Motor Rpm	-	1800
Phase	-	1
Voltage (rated)	-	208
Amperage (rated)	-	3.8
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	1350	1460
Fan RPM	-	1249
Fan Rotation	-	CCW
Motor RPM	-	1249
System SetPt	-	52.8HZ
RL Voltage	-	210
RL Amperage	-	2.7
Total ESP	-	0.61”
Fan Inlet SP	-	-0.61”
Fan Discharge SP	-	ATMS

Completed By: Ethan Van Orden on 02/04/2026

Unit Data - PHOTO LOG

02/04/2026

National TAB

Project: 02-02-26 QT #1447 LAVEEN, AZ

System/Unit: Kitchen Hood Type I

Asset: HD1 AREA:GRIDDLE

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	6030ND-2-F	6030ND-2-F
Job / Serial Num	-	8257480
Type	-	TYPE I CANOPY
Hood length	-	108”
Hood Width	-	60”

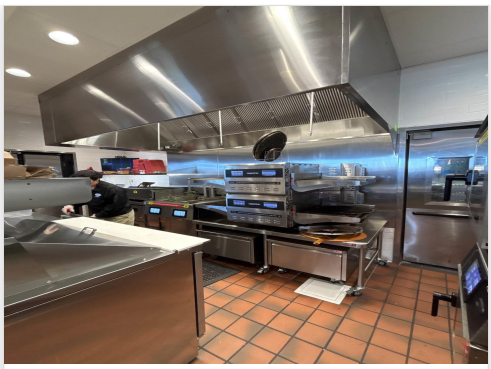
Test Data Exhaust		
	Design	**Actual**
Filter Type	-	BAFFLE
Filter Size 1	-	20X16
Filter Qty 1	-	6
Filter AK factor size 1	-	2.08
Filter Total AK Area	-	12.48
Filter1 FPM	-	108
Filter2 FPM	-	115
Filter3 FPM	-	116
Filter4 FPM	-	131
Filter5 FPM	-	129
Filter6 FPM	-	106
Filter Ave FPM(corr)	-	117
CFM	1350	1460

Cooking Equipment	
	Actual
Item 1	FRYER
Item 2	OVEN

Completed By: Ethan Van Orden on 02/04/2026

Unit Data - PHOTO LOG

02/04/2026



02/04/2026