Report By:

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

Report: TAB Report

Function: Test, Adjust, & Balance

Date: 10/30/2025

Completed By: National TAB

PROJECT

10-27-25 QT #1422 MESA, AZ

1956 E SOUTHERN AVE

MESA, AZ 85204

Client

QUIKTRIP

4705 SOUTH 129TH EAST AVENUE

TULSA, OK 74134

National TAB

Project: 10-27-25 QT #1422 MESA, AZ

Table Of Contents

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	784	350	351				
RTU-2	SALES	800	804	350	323				
RTU-3	BOH/KITCHEN	800	880	350	344				
EF-1	RR/JANITOR					750	828	750	828
EF-3	HOOD					1350	1448	0	0
TOTALS		2400	2468	1050	1018	2100	2276	750	828

HOODS ON

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	2400	2468
TOTAL EXHAUST	2100	2276
NET AIRFLOW	300	192

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.002
SIDE	0.003
REAR	0.004
AVERAGE	**0.003**

HOODS OFF

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	1050	1018
TOTAL EXHAUST	750	828
NET AIRFLOW	300	190

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.002
SIDE	0.002
REAR	0.005
AVERAGE	**0.003**

NOTES:

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CheckList List

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

10-27-25 QT #1422 MESA, AZ

CheckList Information

Name :	01: RTU’s/AHU’s	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/30/2025 - Trinity Dodds - National TAB		
Completed Date :	10/29/2025 - Christine Weale - 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:	

10-27-25 QT #1422 MESA, AZ

CheckList Information

Name :	02: Exhaust Fans	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/30/2025 - Trinity Dodds - National TAB		
Completed Date :	10/29/2025 - Christine Weale - 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:	

10-27-25 QT #1422 MESA, AZ

CheckList Information

Name :	03: Hoods	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/30/2025 - Trinity Dodds - National TAB		
Completed Date :	10/30/2025 - Christine Weale - 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:	

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10-27-25 QT #1422 MESA, AZ

CheckList Information

Name :	04: Final Tests	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/30/2025 - Trinity Dodds - National TAB		
Completed Date :	10/30/2025 - Christine Weale - National TAB		

CheckList Item Details

FINAL CHECKS

HOOD CAPTURE TEST

List kitchen equipment turned on for testing

Comment:

N/A

List smoke candle type used

Comment:

45s S102

Smoke test capture % - Perimeter of hood

Comment:

100

Smoke test capture % - Top of cooking surface

Comment:

100

WITNESS

Date test was completed	10/29/2025

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Comment:

Several people

TAB tech name / Firm

Comment:

Christine Weale, NTI

Site super name / Firm

Comment:

T-Built

Owner representative name / Firm (if Applicable)

Comment:

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:

Front: 0.002 Side Doors: 0.003 Rear range: 0.004 to 0.006 - Pressures were about the same for Hood on and off.

National TAB

Project: 10-27-25 QT #1422 MESA, AZ

System/Unit: AHU/RTU

Asset: RT-1 AREA:SALES FLOOR

Unit Data		
	Design	**Actual**
MFG	NA	AAON
Serial Num	-	202010-ANEK21203
Model Num	NA	RN-013-5-0-EA0A-152
Num OA Filters 1	-	1
OA Filter Size 1	-	45X19
Num Final Filter 1	-	2
Final Filter Size 1	-	46X22.5X2

Motor Data		
	Design	**Actual**
Motor MFG	-	NL
Frame	-	NL
Horsepower	-	3.0
Motor Rpm	-	1760
Phase	-	3
Rated Voltage	-	208
Rated Amperage	-	10.6

Test Data		
	Design	**Actual**
SF CFM	4200	4494
SF RPM	-	47 HZ
OA CFM (Hoods On)	800	784
OA CFM (Hoods Off)	350	351
RL Voltage	-	170
RL Amperage	-	8.0
VFD Max SetPt	-	78.4
VFD Min SetPt	-	24
OA Damper Position (Hoods On)	-	46.0
OA Damper Position (Hoods Off)	-	0.0

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.76"
Fan Suction SP	-	-1.06"
Fan Discharge SP	-	0.37"
Total ESP	-	1.13"
Fan Total SP	-	1.43"

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

Completed By: Christine Weale on 10/29/2025

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Unit Data - PHOTO LOG

10/30/2025

Test Data - PHOTO LOG

10/30/2025

National TAB

Project: 10-27-25 QT #1422 MESA, AZ

System/Unit: AHU/RTU

Asset: RT-2 AREA:SALES FLOOR

Unit Data		
	Design	**Actual**
MFG	NA	AAON
Serial Num	-	202010-ANEK21201
Model Num	NA	RN-013-8-0-EA0A-152
Num OA Filters 1	-	1
OA Filter Size 1	-	45X22
Num Final Filter 1	-	2
Final Filter Size 1	-	46X19.5X2

Motor Data		
	Design	**Actual**
Motor MFG	-	NL
Frame	-	NL
Horsepower	-	3.0
Motor Rpm	-	1760
Phase	-	3
Rated Voltage	-	208
Rated Amperage	-	10.6

Test Data		
	Design	**Actual**
SF CFM	4200	4049
SF RPM	-	47 HZ
OA CFM (Hoods On)	800	804
OA CFM (Hoods Off)	350	323
RL Voltage	-	165.5
RL Amperage	-	7.8
VFD Max SetPt	-	76.4
VFD Min SetPt	-	24.0
OA Damper Position (Hoods On)	-	46.0
OA Damper Position (Hoods Off)	-	0.0

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.67"
Fan Suction SP	-	-0.93"
Fan Discharge SP	-	0.25"
Total ESP	-	0.92"
Fan Total SP	-	1.18"

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

Completed By: Christine Weale on 10/30/2025

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Unit Data - PHOTO LOG

10/30/2025

Test Data - PHOTO LOG

10/30/2025

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Project: 10-27-25 QT #1422 MESA, AZ

System/Unit: AHU/RTU

Asset: RT-3 AREA:BOH/KITCHEN

Unit Data		
	Design	**Actual**
MFG	NA	AAON
Serial Num	-	202010-ANEK21202
Model Num	NA	RN-013-8-0-EA0A-152
Num OA Filters 1	-	1
OA Filter Size 1	-	45X22
Num Final Filter 1	-	2
Final Filter Size 1	-	46X19.5X2

Motor Data		
	Design	**Actual**
Motor MFG	-	NL
Frame	-	NL
Horsepower	-	3.0
Motor Rpm	-	1760
Phase	-	3
Rated Voltage	-	208
Rated Amperage	-	10.6

Test Data		
	Design	**Actual**
SF CFM	4200	4443
SF RPM	-	49.8
OA CFM (Hoods On)	800	880
OA CFM (Hoods Off)	350	344
RL Voltage	-	182.2
RL Amperage	-	9.0
VFD Max SetPt	-	83
VFD Min SetPt	-	24
OA Damper Position (Hoods On)	-	46.0
OA Damper Position (Hoods Off)	-	0.0

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.81"
Fan Suction SP	-	-1.14"
Fan Discharge SP	-	0.55"
Total ESP	-	1.36"
Fan Total SP	-	1.69"

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

Completed By: Christine Weale on 10/30/2025

Unit Data - PHOTO LOG

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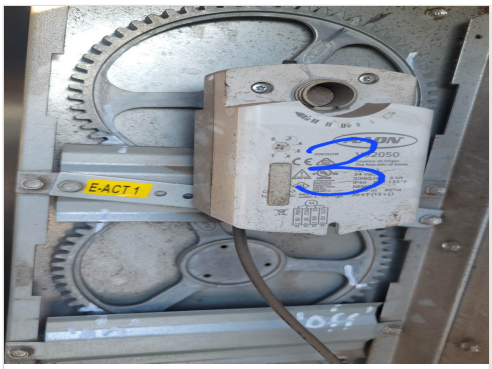
Test Data - PHOTO LOG



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Project:10-27-25 QT #1422 MESA, 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	793		793	99.1
SGRD2	SUPPORT SERVICE	SI	12"	800	1	821		821	102.6
SGRD3	SUPPORT SERVICE	SI	12"	800	1	787		787	98.4
SGRD4	SUPPORT SERVICE	SI	12"	800	1	782		782	97.8
SGRD5	WORKROOM	ES	10"	500	1	794		794	158.8
SGRD6	WORKROOM	ES	10"	500	1	466		466	93.2
Total				4200		4443	0	4443	105.79%

Completed By: Christine Weale on 10/29/2025

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Project: 10-27-25 QT #1422 MESA, AZ

System/Unit: FAN - Exhaust

Asset: EF1 AREA:RR/JANITOR

Unit Data		
	Design	**Actual**
MFG	NA	CAPTIVEAIRE
Model Num	NA	DR50HFA
Serial Num	-	4603528
Type	-	DOWNBLAST
Configuration	-	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	HSSA
Frame	-	48Y
Horsepower	-	0.5
Motor Rpm	-	1625
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	5.6
Service Factor	-	1.0

Test Data		
	Design	**Actual**
CFM	750	828
Fan RPM	-	N/A
Fan Rotation	-	CCW
Motor RPM	-	N/A
System SetPt	-	LOW
RL Voltage	-	N/A
RL Amperage	-	8.1
Total ESP	-	0.16"
Fan Inlet SP	-	-0.16"
Fan Discharge SP	-	ATMS

Completed By: Christine Weale on 10/29/2025

Notes:
[1] COMBO-OVEN GRILLE DAMPER INACCESSIBLE. ABOVE DESIGN, NOT ANTICIPATED TO CAUSE ANY ISSUE.

Written By: Michael McDonnell on 10/31/2025

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Unit Data - PHOTO LOG

10/30/2025

National TAB

Project:10-27-25 QT #1422 MESA, 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	190	190	190	126.7
Total				150		190	190	190	126.67%

Asset	Notes	Date	Written By
EGRD4	[1] DAMPER INACCESSIBLE.	10/31/2025	Michael McDonnell

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Project: 10-27-25 QT #1422 MESA, AZ

System/Unit: FAN - Exhaust

Asset: EF3 AREA:KITCHEN HD

Unit Data		
	Design	**Actual**
MFG	NA	CAPTIVEAIRE
Model Num	NA	DU50HFA
Serial Num	-	7660155
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	NEMA
Frame	-	NL
Horsepower	1/2	0.5
Motor Rpm	-	1800
Phase	-	1
Voltage (rated)	-	208
Amperage (rated)	-	3.8
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	1350	1448
Fan RPM	-	1305
Fan Rotation	-	CCW
Motor RPM	-	1305
System SetPt	-	54.8 HZ
RL Voltage	-	217.4
RL Amperage	-	1.7
Total ESP	-	0.46"
Fan Inlet SP	-	-0.46"
Fan Discharge SP	-	ATMS

Completed By: Christine Weale on 10/29/2025

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Unit Data - PHOTO LOG

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National TAB

Project: 10-27-25 QT #1422 MESA, 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	-	7660155
Type	-	TYPE I CANOPY
Hood length	-	108"
Hood Width	-	60"

Test Data Exhaust		
	Design	**Actual**
Filter Type	-	CAPTRATE SOLO
Filter Size 1	-	16X20
Filter Qty 1	-	6
Filter AK factor size 1	-	2.08
Filter Total AK Area	-	12.48
Filter1 FPM	-	112
Filter2 FPM	-	118
Filter3 FPM	-	120
Filter4 FPM	-	117
Filter5 FPM	-	116
Filter6 FPM	-	111
Filter Ave FPM(corr)	-	116
CFM	1350	1448

Cooking Equipment	
	Actual
Item 1	FRYER
Item 2	COMBIOVEN

Completed By: Christine Weale on 10/29/2025

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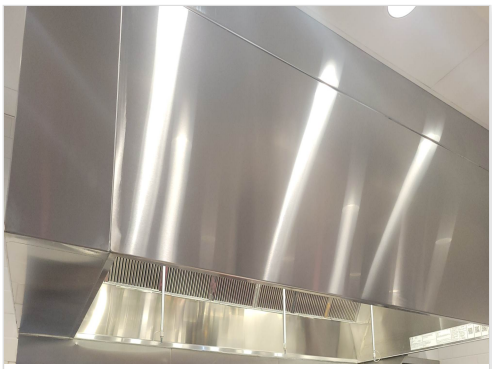
Unit Data - PHOTO LOG



10/30/2025

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