

**A** DEMO VERSION  
**B**  
**C** Your Logo Here

# ASHRAE 110 Test Report Cover Sheet

**Client:**

Amgen Corporation

One Amgen center Drive

Thousand Oaks

CA 91320-3424

Ray Russell

Test Report # : 1

Test Date # : 1/6/2005

Lead Technician: **Joe Tech**

## **Test Report Scope and Comments**

Test performed to confirm initial installation performance.

## **Fume Hood Information and Test Conditions**

Equipment ID:	4 Foot CAV	Location:	Bldg 25 Main Lab
Manufacturer:	Fisher Hamilton	Model #:	4 Ft Safeguard
Sash Design Opening (in):	18 x 38.5	Baffle Position:	Closed
Sash Style:	Vertical	Airflow Style:	VAV
Amount of Material In Hood:	Empty	Fume Hood Condition:	AM (As Manufactured)

## **Gas Ejector Equipment :**

Gas Ejector Description : ASHRAE 110 Ejector with 0.25" Orifice (4.0 lpm)

Measured Gas Flow Rate : 4.0 liters per minute

## **Calibrated Test Equipment :**

<b><u>Used For</u></b>	<b><u>EN</u></b>	<b><u>Description</u></b>	<b><u>SerialNo</u></b>	<b><u>Calibration Due</u></b>
Gas Detector		Micromanometer Multimeter	M00446	2/28/2006
Air Velocity		Micromanometer Multimeter	M00446	2/28/2006

*(Gas detector was user standardized with test gas prior to start of tests)*

# VAV Fume Hood Velocity Test Raw Data Sheet

Equip:                      Hood **001**

Test ID:       1       Tested By:       Tom Grall       Test Date:       11/6/2005      

## Inflow Velocity Test Full Open Sash

Full Open Sash Position ( WxH)       38.50 X 18.00      

Min.Samples Required: 8 ( 2 Row(s) Of 4 )

(All Values For Air Velocities Are In Feet Per Minute)

	1	2	3	4	5	6	7	8	9	10	11	12
A	115	104	112	108								
B	115	107	112	123								
C	112	121	139	121								
D												
E												

**Average Air Velocity (fpm):** **116**      **Acceptance Limits : 100 to 165 fpm Minimum**       PASS     FAIL

**Air Velocity Variation (%):** **20**      **Acceptance Limits : 30 % Maximum**       PASS     FAIL

**LowPoint Air Velocity (fpm):** **104**      **Acceptance Limits : 70 fpm Minimum**       PASS     FAIL

## Inflow Velocity Test 50% Open Sash

Partial Open Sash Position ( WxH)       38.50 X 9.00      

Min. Samples Required: 4 ( 1 Row(s) Of 4 )

	1	2	3	4	5	6	7	8	9	10	11	12
A	108	112	118	117								
B												
C												
D												

**Average Air Velocity (fpm):** **114**      **Acceptance Limits : 100 to 165 fpm Minimum**       PASS     FAIL

## Inflow Velocity Test 25% Open Sash

Partial Open Sash Position ( WxH)       38.50 X 4.50      

Min. Samples Required: 4 ( 1 Row(s) Of 4 )

	1	2	3	4	5	6	7	8	9	10	11	12
A	110	112	115	114								
B												
C												
D												

**Average Air Velocity (fpm):** **113**      **Acceptance Limits : 100 to 165 fpm Minimum**       PASS     FAIL

## Cross Draft Velocity test

Samples Required: 4 ( 1 Row Of 4 )

X-Draft	1	2	3	4	5	6	7	8	9	10	11	12
Horizontal	12	15	14	1								
Vertical	7	9	11	0								

Test ID

1

Equipment #

Hood 001

Tested By:

Joe Tech

Test Date:

11/6/2005

Test 1

## Airfoil Smoke Test

A small volume smoke source was slowly passed under the front air foil. The smoke was observed to determine the airflow patterns from the airfoil. In order to pass this test, the smoke must be drawn smoothly inward, toward the rear exhaust baffles. Airfoil smoke must not be entrained in the vortex at the top of the hood.

### Airfoil Smoke Test Results

Pass - Good Airflow Patterns

## Small Volume Smoke Test

Using the small volume smoke source, a stream of smoke was discharged along both walls, and the floor of the hood, 6 inches behind the front opening of the hood, and along the face opening of the hood. The smoke was observed to determine the airflow patterns in the work zone. Smoke should be drawn smoothly inward, toward the rear exhaust baffles, with minimal eddies or forward flow. In order to pass this test, the smoke must not escape from the hood.

### Small Volume Test Results

Pass - Fair Airflow Patterns

## Back panel Smoke Test

Using the small volume smoke source, a stream of smoke was discharged in 8 inch diameter circles along the back of the hood. Smoke was also discharged at the work surface and along all equipment in the hood. Smoke should be drawn smoothly inward, toward the rear exhaust baffles, with minimal eddies or forward flow. In order to pass this test, the smoke must not escape from the hood.

### Backpanel Smoke Results

Pass - Poor Airflow Patterns

## Large Volume Smoke Test

A large volume smoke generator was used to introduce a large volume of smoke into the hood. The smoke source was placed on the work surface, 6 inches inward of the plane of the sash. The smoke was observed to visualize airflow patterns in the hood. A steady escape of smoke from the hood is cause for failure. Additionally, the time required for the smoke to completely clear the hood was recorded.

### Large Volume Results

Pass - Fair Airflow Patterns

Clearance Time (Seconds)

14

# ASHRAE110 Tracer Gas Trend Data Report

## Amgen Corporation

Hood ID #  
Hood 001

Test Date  
10/10/2006

Test Time  
8:00 PM

Test ID  
1

Technician  
Joe Tech

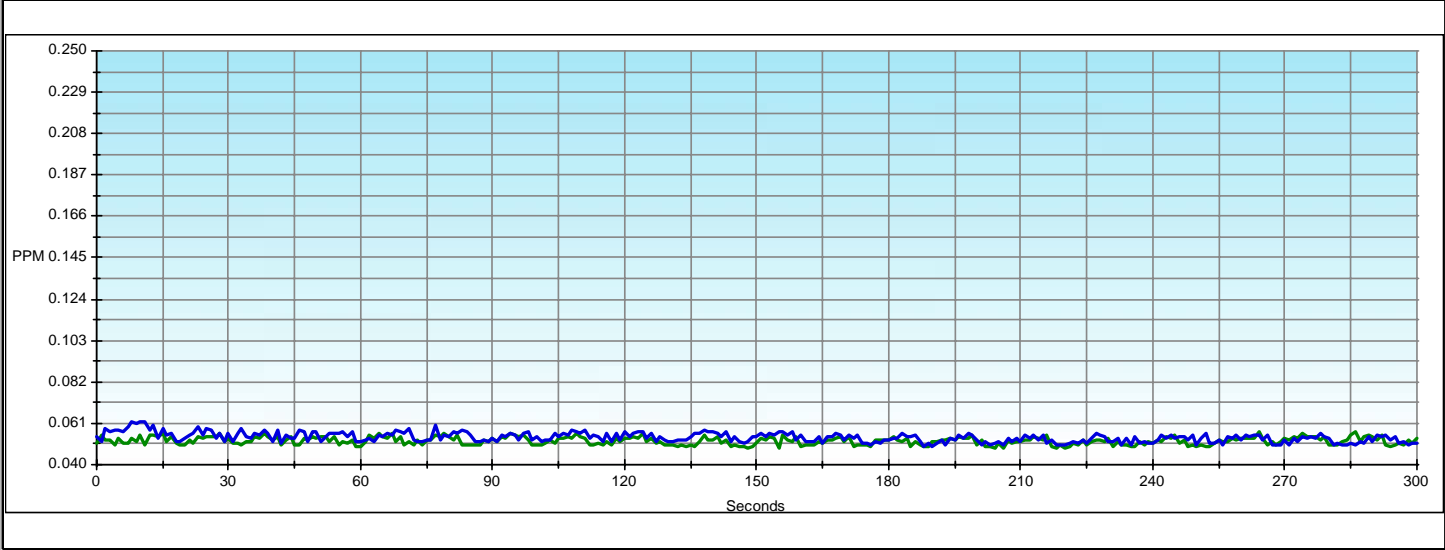
# Of Readings

300

Sample Frequency

00:00:01

	Average	Minimum	Maximum
<b>Left</b>	0.054	0.049	0.062
<b>Center</b>	0.052	0.048	0.057
<b>Right</b>	0.000	0.000	0.000



**Sash Scan Test Result**  
**Location and Max Reading**  
 0 ppm

**Sash Movement Effect**  
**Hood Condition and Max Reading**  
 0.000

Comments

# ASHRAE110 Sash Scan Test

## Sash Perimeter Scan Test

Hood ID # Hood 001

Test Date 10/10/2006

Test ID 1

Test Time 8:00 PM

Technician Joe Tech

With the mannequin removed from the face of the hood and gas valve open, the periphery of all openings was scanned with the probe held 1 inch (25 mm) from the edge of the hood opening scanning at a rate of no more than 3 inches (75 mm) per second. The scan rating listed below is determined by the highest reading during the scan and the location of the highest reading.

**Scan Rating: 0 ppm**

