

North American VOC Regulatory Update

March 2010

Bringing out the best in hardwood floors

Bona[®]

Health Effects of Ozone



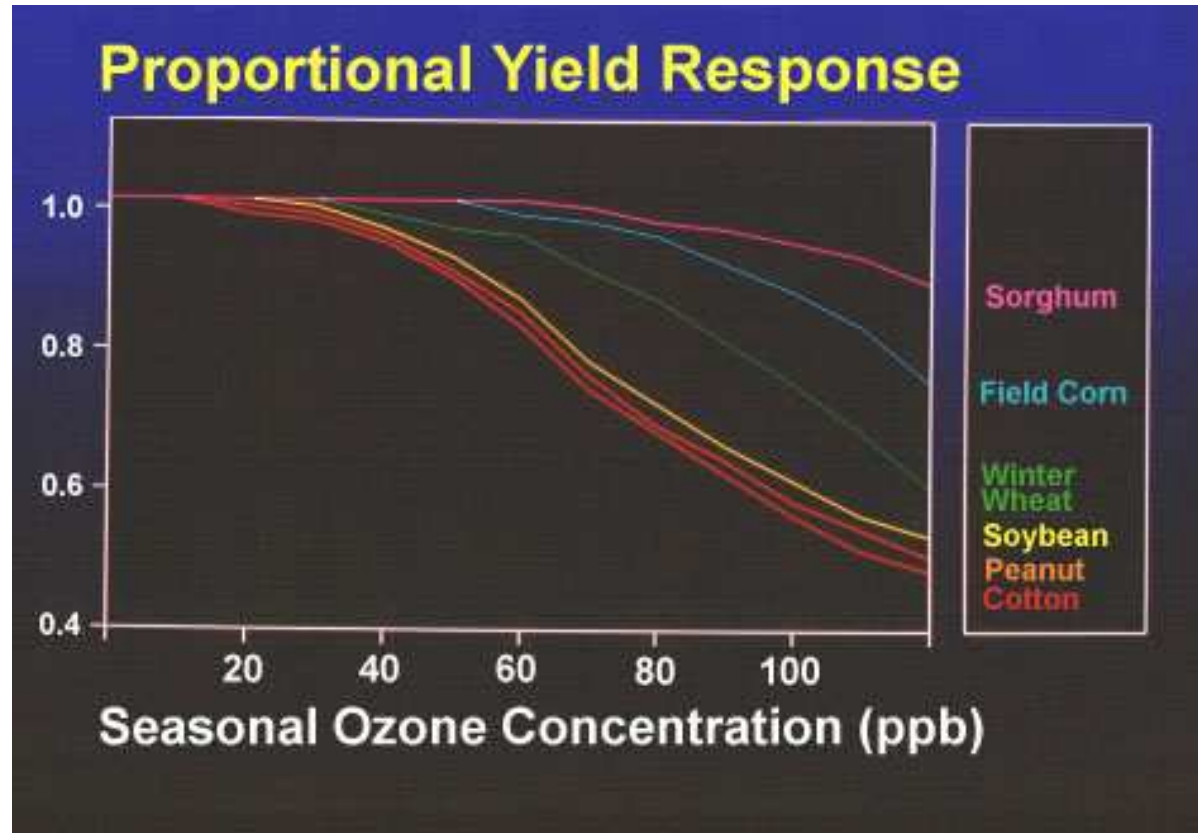
- Asthma
- Reduced Lung Function
- Allergies
- Scratchy Throats
- Bronchitis
- Shortness of Breath

Ozone's Effect on Plants



•Necrotic lesions on tobacco BEL W 3 leaves after growth at ambient ozone concentrations (picture taken from the [web-site](#) of the North Carolina State University at Raleigh)

Decreased Yield in Crops

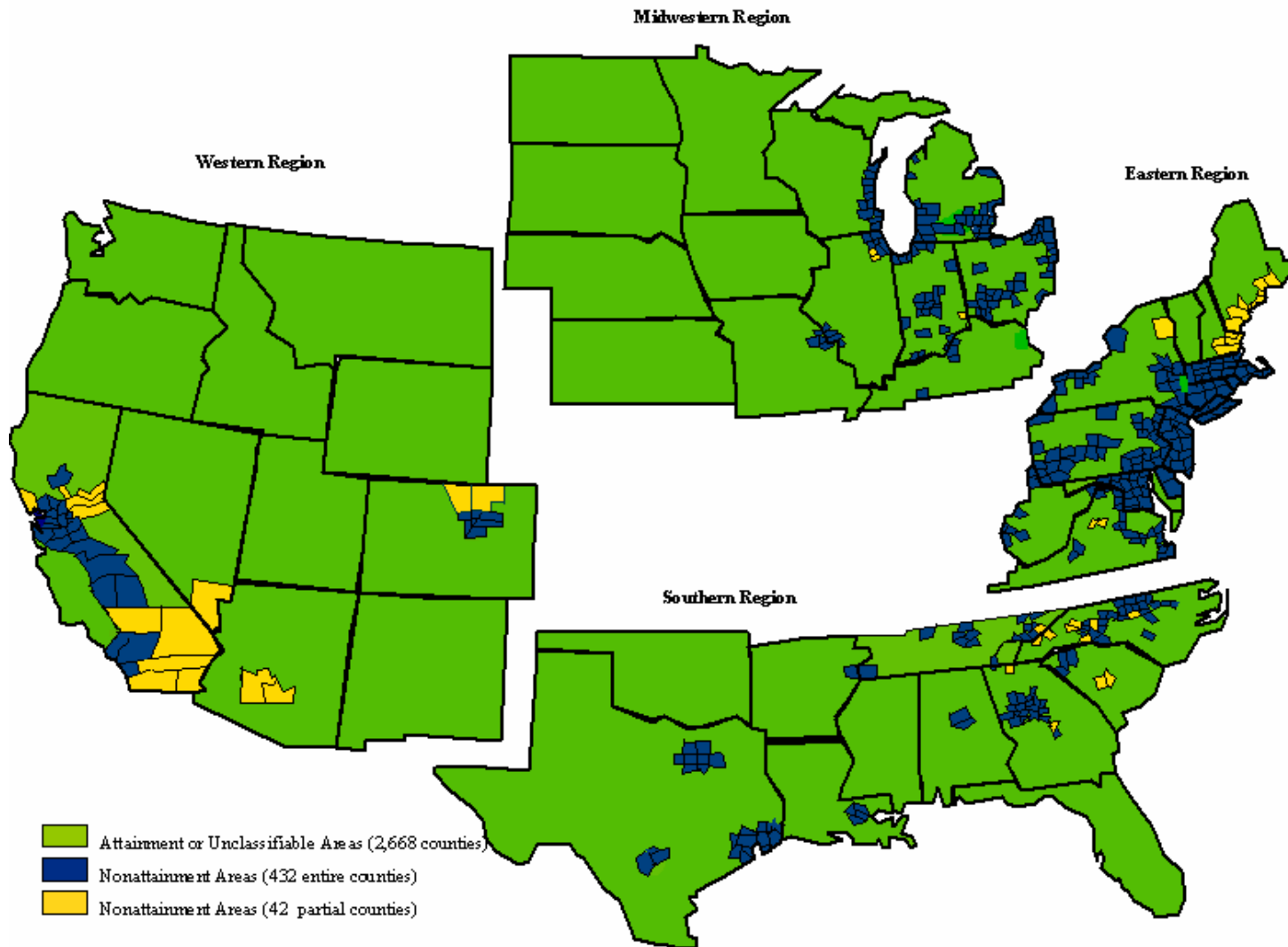


•The strongest evidence for significant effects of ozone on crop yield comes from NCLAN studies (Heagle 1989). The results show that dicot species (soybean, cotton, and peanut) are more sensitive to yield loss caused by ozone than monocot species (sorghum, field corn, and winter wheat).

Rule Background Information

- 1997 – EPA finalized a change to the 1 hour and 8 hour standard for Ozone (smog) (1 hr std – 0.12 ppm & 8 hr std – 0.08ppm)
- 1999 – National AIM Rule took effect
- 2003 – CARB Suggested Control Measure took effect.
- 2004 – EPA issued final designations of attainment & non-attainment (See following Map)
- 2005 – Several Ozone Transport Commission states and regions rules took effect
- 2007-2021 – States must comply with the new EPA Standard, *or risk loosing federal funding* (roads, etc.)
- 2011 – *CARB newest SCM takes effect for several air districts*
- 2013 – *Possible new EPA Rule takes effect*

8 Hour Ozone Standard Attainment and Nonattainment Areas in the U.S. as of April 2004



2008 Estimated Population

Regulated Areas to date: 17 states
– 137,315,231 (46%)

OTC Area – 68,579,287 (23%)

CA alone – 36,756,666 (12%)

SCAQMD – 15,477,162 (42% of CA)

Bay Area AQMD - 5,336,919 (14.5% of CA)

San Joaquin Valley Unified Air District – 4,175,398 (11.3% of CA)

San Diego AQMD – 3,001,072 (8.2% of CA)

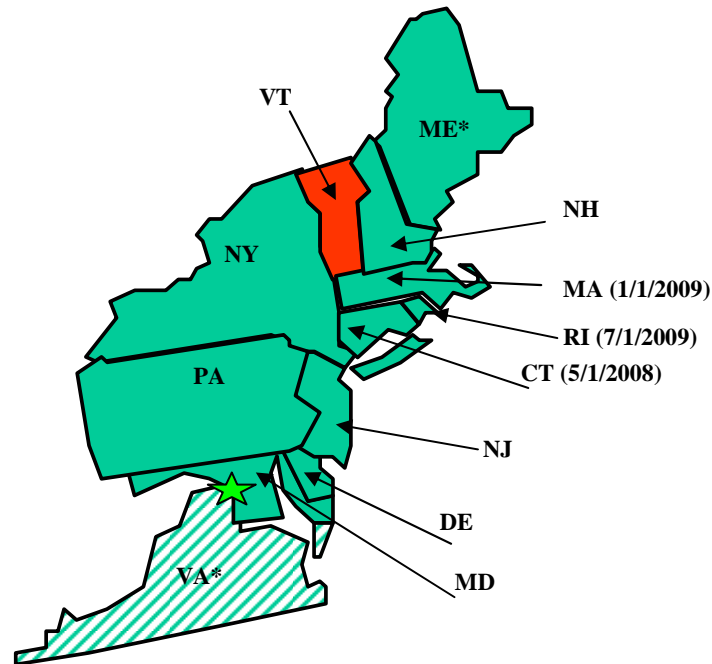
Air Districts with National Rule – 1,395,425 (3.8%)

LADCO States – 30,764,285 (10%)

AZ (Maricopa County) – 3,954,598 (1%)

OTC Map

(No changes as of November 2009)



Green – Final

Note: Virginia's Rule pertains only to the Northern Virginia and Fredericksburg Emissions Control Area around DC

Red – Will consider if necessary (default to National AIM Rule until adopted)

District of Columbia has passed rule. Indicated by the star.

* - These States have exceptions (See Page 4)

Exception to the Rules:

Virginia:

Virginia's Rule only applies to the following counties and cities in the Northern Virginia and Fredericksburg Emissions Control Area

Arlington County

Fairfax County

Loudoun County

Prince William County

Stafford County

Spotsylvania County

Alexandria City

Fairfax City

Falls Church City

Manassas City

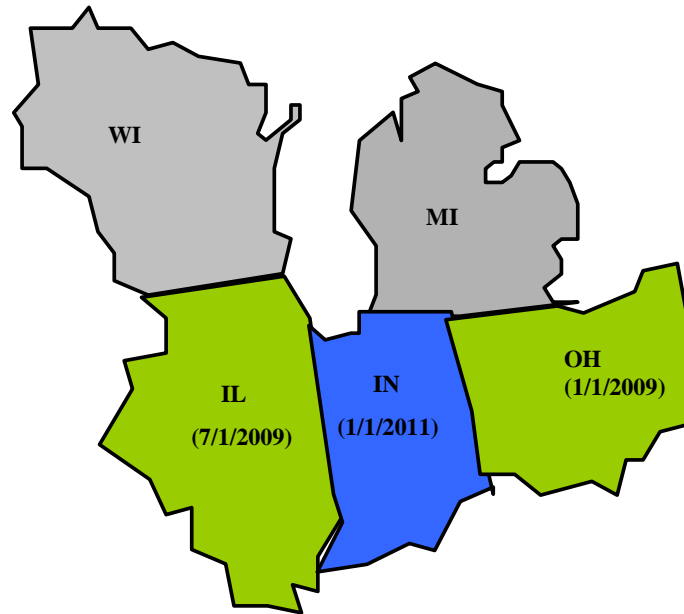
Manassas Park City

Fredericksburg City

Maine:

Varnishes and interior stains will use the National AIM Rules limits until 2011. There is no exceedance fee so the varnishes and interior stains must comply with the limit or have to use the quart exemption.

Lake Michigan Air Directors Consortium (LADCO) (March 2010)

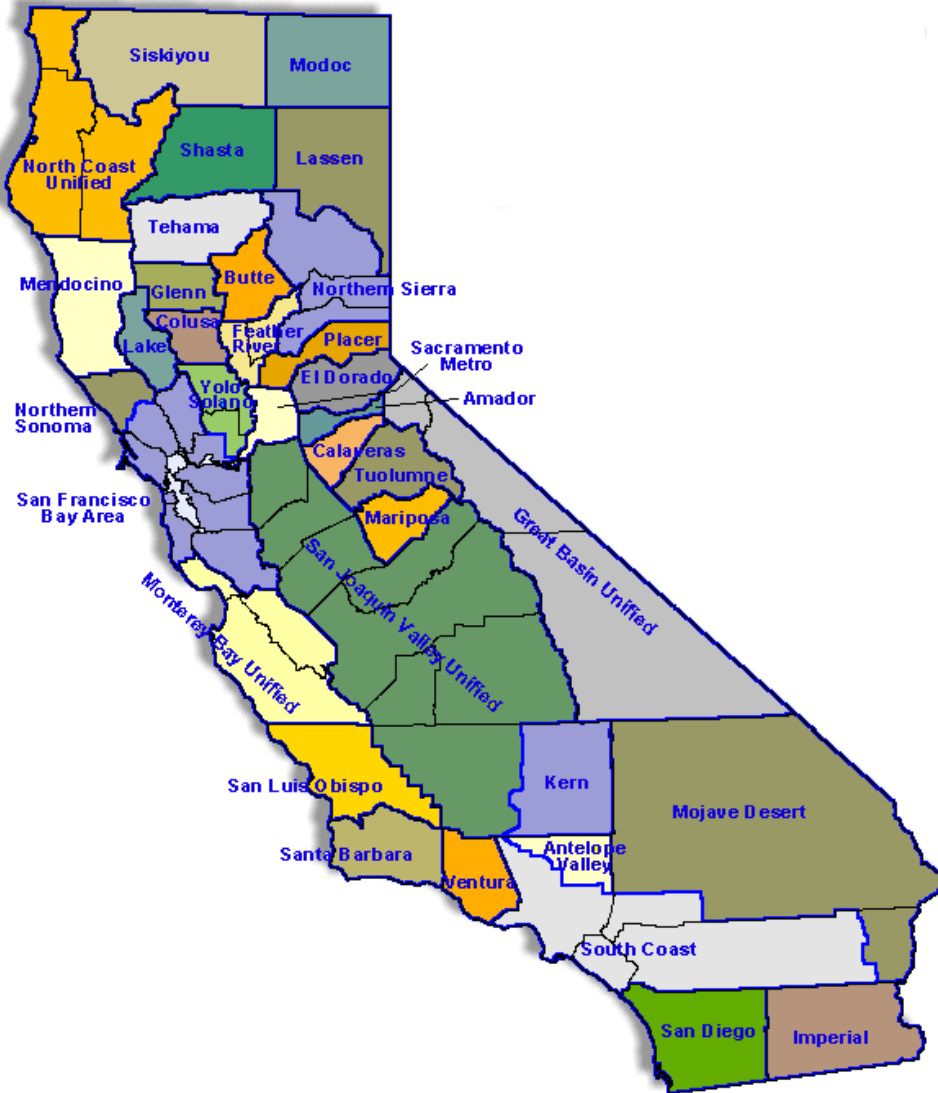


Green – Final

Blue – In Process to be approved in April 2010

Grey – Determining if necessary or waiting for EPA

California Air Districts



20/35 Districts have adopted 2000 CARB SCM

New 2007 CARB SCM – suggested 2010 compliance

Current Air Districts with Proposal/Adoption

Bay Area - Adopted – 2011 compliance

San Joaquin – Adopted 2011 compliance

Ventura – Adopted– 2011 compliance

Kern – Proposed – 2011 compliance

Anticipated Air Districts

Monterey Bay

Sacramento Metro

San Diego

Imperial

In 2011, CA will be more challenging logistically than OTC ever was!!!!

<http://www.arb.ca.gov/coatings/arch/DISMAP.GIF>

CANADA

Regulation Registered 9/9/2009

Compliance Date for Manufacturers – 2010/09/09
Anything manufactured after 2010/09/09 must comply with new limits

Sell Through of material manufactured prior to 2010/09/09 until 2012/09/09
(Distributors have to have off shelves by 2012/09/09)

Distributors (Importers) will have to maintain records of the importation of all architectural coating products brought into Canada (more details in later slide)

Distributors who sell to secondary distributors and flooring retailers will have to maintain records of sales (more details in later slide)

2010 VOC Tables (March 2010)

Category	National	California			OTC ^{3,4} /Canada
	AIM Rule ¹	CARB		South Coast	* See Below
	Current	Current	NEW SCM (2010)	Current	Current
SEALERS					
Sanding Sealers	550	350	275	275**	350
Primer, Sealer , Undercoaters	400	200	100	100	200
Quick Dry Sealers	450	200	275	100	200
Lacquer Sanding Sealer	680	550	275	275**	550
STAINS					
Stain, Semi-transparent	550	250	275	250 ²	250
TOPCOATS/FINISHES					
Varnishes (H ₂ O Urethanes/Solvent OMUs)	450	350	275	275**	350*
Conversion Varnish	725	350	275	275**	725
Conjugated Oil Varnish	--	--	--	--	450 (CANADA only)
Lacquers	680	550	275	275**	550
Clear Brushing Lacquer	---	680	275	275**	680
Shellacs – Clear	730	730	730	730***	730

Note: Varnish category includes the following clear wood finish technologies: OMUs, waterborne, moisture cure, epoxy and other 2-pack types.

*OTC States with final rules adopted: Connecticut, Delaware, District of Columbia, Maine (except varnish & stain), Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Virginia, (Only the Northern Virginia and Fredericksburg Emissions Control Areas which includes: Arlington, Fairfax, Loudoun, Prince William, Stafford and Spotsylvania Counties; Cities of Alexandria, Fairfax, Falls Church, Manassas, Manassas Park. And Fredericksburg)

** Maine will allow varnishes and interior stains to use the National Rule for VOC until January 1, 2011. (450 g/L, 550 g/L respectively)

** Quart Exemption has been eliminated for Varnishes, Sanding Sealer, and Lacquers in the South Coast Air District

*** Shellacs manufactured after 12/31/06 are not allowed to be used on wood flooring in South Coast.

1 – EPA is revising the National AIM Rule – limits should be similar to OTC Phase I limits

2 – Interior

3 – RI adopted OTC Phase I – VT will probably remain with National AIM Rule for now.

4 – LADCO States – OH and IL has adopted OTC Phase I limits, and IN has proposed OTC Phase I limits

Bona® Product VOC Tables

(March 2010)

Residential and Commercial Products

Product	Product VOC (g/L)	National		OTC/LADCO/Canada	
		AIM Rule		DE/DC/MA/ME/VA/CT/NT/NY/NJ/PA/MD/RI/OH/IL	
		Current	Possible (2013)	Current	Possible (2012)
Stains					
Drifast® Stain	< 550	550	250	250 (qts OK)	275 (qts OK)
Sealers					
Bona Bonaseal®	< 100	400	200	200	100
Bona D1S™	< 250	550	350	350	275
Bona AmberSeal™	< 250	550	350	350	275
Drifast® Sealer	< 550	550	200	200 (qts OK)	200 (qts OK)
Finishes					
Bona Mega®	< 150	450	350	350	275
Bona Naturale™	<210	450	350	350	275
Bona Novia™	<220	450	350	350	275
Bona Traffic®	< 210	450	350	350	275
Woodline® 350 Poly	< 350	450	350	350	275
Woodline® Poly	< 510	450	350	350 (qts OK)	275 (qts OK)

Product	Product VOC (g/L)	California		
		CARB		South Coast
		Current	NEW SCM (2011)	Current
Stains				
Drifast® Stain	< 550	250	275	250 (qts OK)
Sealers				
Bona Bonaseal®	< 100	200	275	275
Bona D1S™	< 250	350	275	275
Bona AmberSeal™	< 250	350	275	275
Drifast® Sealer	< 550	350	275	100 (qts OK)
Finishes				
Bona Mega®	< 150	350	275	275
Bona Naturale™	<210	350	275	275
Bona Novia™	<220	350	275	275
Bona Traffic®	< 210	350	275	275
Woodline® 350 Poly	< 350	350	275	275 (NA)
Woodline® Poly	< 510	350	275	275 (NA)

NOTE:

- Shaded products are available in **quarts only** in the OTC/CARB/LADCO regulated areas.
- Woodline® Poly and Woodline® 350 Poly are not available for use in the South Coast AQMD
- Cleaners, Prep, Luster Coat, Refresher, and Filler are not subject to AIM Coating regulations

Bona® Sport Product VOC Tables

(March 2010)

Product	Product VOC (g/L)	National		OTC/LADCO/Canada	
		AIM Rule		DE/DC/MA/ME/VA/CT/NT/NY/NJ/PA/MD/RI/OH/IL	
		Current	Possible (2013)	Current	Possible (2012)
Sealers					
Bona Sport® Sport Seal	<500	550	350	350 (NA)	275
Bona Sport® Drifast™ Sealer	< 550	550	350	350 (NA)	275
Bona Sport® Supersport™ Seal	<100	400	200	200	100
Bona Sport® Sport Seal 350	<350	550	350	350	275 (NA)
Finishes					
Bona Sport® All Court	<500	450	350	350 (NA)	275
Bona Sport® Sport Poly	<450	450	350	350 (NA)	275
Bona Sport® Sport Poly 350	<350	450	350	350	275 (NA)
Bona Sport® Supersport™	<350	450	350	350	275 (NA)
Bona Sport® Supersport™ One	<145	450	350	350	275
Game Lines Paint					
Bona Sport® Courtlines™	<490	500	500	500	500

Product	Product VOC (g/L)	California		
		CARB		South Coast
		Current	NEW SCM (2011)	Current
Sealers				
Bona Sport® Sport Seal	<500	350 (NA)	275	275 (NA)
Bona Sport® Drifast™ Sealer	< 550	350 (NA)	275	275 (NA)
Bona Sport® Supersport™ Seal	<100	200	275	275
Bona Sport® Sport Seal 350	<350	350	275 (NA)	275 (NA)
Finishes				
Bona Sport® All Court	<500	350 (NA)	275	275 (NA)
Bona Sport® Sport Poly	<450	350 (NA)	275	275 (NA)
Bona Sport® Sport Poly 350	<350	350	275 (NA)	275 (NA)
Bona Sport® Supersport™	<350	350	275 (NA)	275 (NA)
Bona Sport® Supersport™ One	<145	350	275	275
Game Lines Paint				
Bona Sport® Courtlines™	<490	500	500	500

NOTE:

- Lightly Shaded products are **not** available in the OTC/CARB/LADCO regulated areas. Sport Poly is **OK** in Maine until 2011.
- Sport Poly 350 and Supersport are not available in the South Coast AQMD.
- Cleaners, Prep, and Filler are not subject to AIM Coating regulations.
- NA – Not Available

An Example: Typical Contractor's Van in New Jersey

- 6 Quarts of Stain (VOC 550 g/L)
- 2 gallon of Stain (VOC 550 g/L)
- 10 gallons of Sealer (VOC 550 g/L)
- 10 gallons of OMU Poly (VOC 525 g/L)
- 5-10 gallons of Waterborne (VOC <350 g/L)

An Example: Typical Contractor's Van

What could happen if caught in NJ:

- 6 Quarts of Stain – Quarts are OK because of Quart Exemption
- 2 gallons of Stain - **\$1,200** for being over the 250 VOC limit
- 10 gallons of Sealer - **\$10,000** for being over the 200 VOC limit
- 10 gallons of OMU Poly - **\$6,000 fine** for being over 350 VOC limit
- 5-10 gallons of Waterborne – In this van, all waterborne are under the 350 VOC limit

Therefore, a typical contractor could be fined \$17,200 for having product in his van that is not VOC compliant.

(Based on potential fine of \$600 per gallon of noncompliant product that is 25% over the limit and \$1,000 per gallon that is over 50% above the limit)

Distributors and Manufacturers

Distributors

- \$4,000 for Incorrect Documentation
- \$17,200 for Contractor's van if liable because of Incorrect Documentation

Manufacturers

- \$4,000 for Incorrect Documentation
- \$17,200 for Contractor's van if liable because of Incorrect Documentation

What's Next

- **Ozone Transport Commission (OTC)**
 - Will look at CARB SCM for next Model Rule
 - Model Rule – 2009-2010
 - Predicted Compliance Date 2012 (?)

- **MRPO/LADCO: Great Lakes Region – Ohio, Michigan, Wisconsin, Illinois, Indiana**
 - OH adopted OTC Model Rule – Effective 1/1/2009
 - IL adopted OTC Model Rule – Effective 7/1/2009
 - IN is finishing process – Will adopt April 2010 with compliance 2011
 - WI, MI are looking at to determine if needed (may wait for EPA)

- **EPA – has been looking at New AIM Rule for several years**
 - Probably based on OTC limits (350 g/L varnish category, 250 g/L stains)
 - Main delay is the Small Business Administration (SBA) and concerns regarding impact of change on the small manufacturer
 - Best Guess – Anticipated adoption 2012-2013
 - Compliance date 2013-2014 (earliest possible)