Local Stationary/ Area-wide Measures

SMAQMD/YSAQMD

Regional List of Local Stationary/ Area-wide Measures

Pollutant	Control Measure	Districts Adopting
VOC	**Architectural Coatings**	All
VOC	**Automotive Refinishing**	SMAQMD, FRAQMD, PCAPCD, YSAQMD
VOC	**Degreasing/Solvent Cleaning**	SMAQMD, EDCAQMD, FRAQMD, YSAQMD
VOC	**Graphic Arts**	YSAQMD
VOC	**Natural Gas Production**	SMAQMD
VOC	**Unspecified Coating**	SMAQMD, EDCAQMD
NOx	**Asphalt Concrete**	SMAQMD, PCAPCD
NOx	**Boilers and Process Heaters**	YSAQMD
NOx	**IC Engines**	SMAQMD, FRAQMD, YSAQMD
NOx	**Water Heaters**	All

SMAQMD/YSAQMD

VOC/NOx Control Measures Proposed in Both Districts

Stationary/Area-wide Measures – Architectural Coatings

- Baseline emissions in the Sacramento Region, in 2012
  - 7.4 tpd VOC
- Affected sources
  - do-it-yourself consumers,
  - Construction trades people including:
    - Painting contractors,
    - Cabinet refinishers
    - Flooring contractors
    - Swimming pool painters
    - Roadway striping companies
    - Concrete workers
    - Roofers
    - Deck and fencing manufacturers or installers
  - Industrial and commercial maintenance operations
  - Manufacturers and distributors of paints, wood product coatings, and other surface coating materials

Stationary/Area-wide Measures – Architectural Coatings

- Proposed changes include lowering VOC content for following coating categories:
  - Flat and Nonflat – high gloss
  - Antenna, Antifouling, and Flow Coatings
  - Clear Wood Coatings (Lacquers/Sanding Sealers/Varnishes)
  - Floor Coatings
  - Primers, Sealers, and Undercoaters (including Quick-Dry and Specialty)
  - Quick-Dry Enamels
  - Roof Coatings
  - Stains, Opaque
  - Temperature-Indicator Safety Coatings
  - Traffic Marking Coatings
  - Waterproofing Sealers (including concrete/masonry sealers)

- Cost or Cost Effectiveness
  - Estimated overall cost effectiveness is $11,612/ton - $16,996/ton

Stationary/Area-wide Measures – Architectural Coatings

- Schedule

District	Adoption	Implement
Sacramento	2010	2012
Yolo-Solano	2010	2011

- Emission Reductions

VOC, tons per day		
2012	2018	2023
0.98	1.27	1.39

Stationary/Area-wide Measures – Automotive Refinishing

- Baseline emissions in the Sacramento Region, in 2012
  - 1.3 tpd VOC

- Affected sources include
  - Refinishing operations (individuals and commercial shops):
    - passenger cars, pickup trucks and sport utility vehicles
    - buses and commercial truck cabs and chassis,
    - motorcycles,
    - military vehicles, or mobile equipment,
  - Retailers and wholesalers of automotive refinishing products

Stationary/Area-wide Measures – Automotive Refinishing

- Proposed changes from implementing CARB's 2005 SCM include
  - Lower VOC coating for most coatings by:
    - Consolidate the limits for cars, trucks and motorcycles with the limits for buses, military vehicles and mobile equipment
    - Eliminate the multistage topcoat system and replace with VOC limits for color and clear coats
    - Consolidate the limits for precoat, primers, primer sealers and primer surfacers
    - Eliminate the specialty coating category and replace with specific limits
    - Set lower VOC limits for adhesion promoters, pretreatment coatings, single-stage coatings, and underbody coatings
    - Set lower VOC standards for surface preparation and equipment cleanup
- Cost or Cost Effectiveness
  - Overall cost effectiveness based on the SCM is $2,860/ton - $11,637/ton
    - CARB staff estimated that if all of the costs are passed on to the consumer the average price of a repair would increase $11

Stationary/Area-wide Measures – Automotive Refinishing

- Schedule

District	Adoption	Implement
Sacramento	2008	2010
Yolo-Solano	2008	2009

- Emission Reductions

VOC, tons per day		
2012	2018	2023
0. 21	0.28	0.29

Stationary/Area-wide Measures – Degreasing/Solvent Cleaning

- Baseline emissions in the Sacramento Region, in 2012
  - 2.1 tpd VOC

- Affected solvent use and cleaning operations:
  - Electrical apparatus and electronic components manufacturing or repair operations,
  - Construction trades (such as wood finishing)
  - Printing shops,
  - Metal parts and products
  - Can coating
  - Automotive repair shops
  - Electric and electronic components repair and manufacturing facilities, and
  - Many other repair and maintenance operations.

Stationary/Area-wide Measures – Degreasing/Solvent Cleaning

- Proposed changes include the following changes throughout the degreasing, solvent and coating rules:
  - Remove the composite vapor pressure limit option
  - Lower general solvent cleaning and general application equipment cleaning VOC content to 25 grams per liter
  - Lower the VOC content to 25 g/l for the following specialty uses:
    - Flexographic printing application equipment cleanup
    - Can container assembly equipment
    - Vapor and non-vapor degreasing operations
    - Aerospace coating application equipment cleanup
    - Wood coating surface preparation and cleanup
    - Organic Chemical Manufacturing Operations maintenance cleaning
    - Polyester resin cleanup materials

Stationary/Area-wide Measures – Degreasing/Solvent Cleaning

- Lower VOC content in other specialty uses
  - Specialty Flexographic Printing application equipment 100 g/l
  - UV Ink application equipment 500 g/l
  - Electrical Apparatus and Electronic Components 100 g/l
    (Application equipment and repair and maintenance cleaning)
  - Sterilization of food manufacturing/processing equipment 200 g/l

- Cost or Cost Effectiveness
  - Estimated overall cost effectiveness is minimal - $2,220/ton
    - In general compliant materials are readily available on the market and do not cost more than non-compliant materials

Stationary/Area-wide Measures – Degreasing/Solvent Cleaning

- Schedule

District	Adoption	Implement
Sacramento	2007	2008
Yolo-Solano	2007	2008

- Emission Reductions

VOC, tons per day		
2012	2018	2023
1.06	1.11	1.15

Stationary/Area-wide Measures – IC Engines

- Baseline emissions in the Sacramento Region, in 2012
  - 1.93 tpd NOx
- Affects all gasoline, diesel and gaseous fuel fired internal combustion (IC) engines greater than 50 horsepower typically used by:
  - Natural gas production operations, and
  - Various standby electrical generating operations including
    - prisons, hospitals, data centers, and other commercial or industrial uses
  - Water or sewage pumps
  - Vapor extraction operations
  - Landfill gas control devices

Stationary/Area-wide Measures – IC Engines

- Proposed rule changes include
  - Exempt agricultural engines covered by state diesel smoke rules
  - Exempt standby units from the emission standards

Engine Type	NOx ppm
Spark Ignited IC Engines	
Rich-Burn Waste Gas (in SMAQMD only)	50
Rich-Burn Cyclically-loaded, Field Gas (in SMAQMD only)	300
Rich-Burn All Other	25
Lean-Burn Two-Stroke Gaseous Fueled, <100 Hp	200
Lean-Burn All Other	65
Compression Ignited IC Engines	80

Stationary/Area-wide Measures – IC Engines

- Cost or Cost Effectiveness
  - Estimated overall cost effectiveness is - $3,447/ton - $11,705/ton
- Schedule

District	Adoption	Implement
Sacramento	2008	2010-2012
Yolo-Solano	2009	2010

- Emission Reductions

NOx, tons per day		
2012	2018	2023
0.15	0.15	0.15

Stationary/Area-wide Measures – Water Heaters

- Baseline emissions in the Sacramento Region, in 2012
  - 2.24 tpd NOx
- Affects:
  - Manufacturers and distributors of new devices
    - Commercial and industrial water heaters and boilers, and
    - Residential water heaters
  - New or replacement fuel fired water heaters installed in:
    - Homes
    - Hospitals
    - Schools
    - Laundering facilities
    - Apartment buildings
    - Office buildings
    - Swimming pools
    - Restaurants

Stationary/Area-wide Measures – Water Heaters

- Establish emissions limits for new water heaters <1 mmBTU/hr
  - <75,000 Btu/hr – 15 ppm
  - 75,000 – 400,000 BTU/hr – 55 ppm and then 20 ppm in 2012
  - 400,000 – 1 mmBTU/hr – 30 ppm and then 20 ppm in 2010
- Cost or Cost Effectiveness
  - Estimated unit cost increase is zero to $3,000
  - Estimated overall cost effectiveness is $1,354/ton - $11,957/ton

Stationary/Area-wide Measures – Water Heaters

- Schedule

District	Adoption	Implement
Sacramento	2008	2009
Yolo-Solano	2009	2009

- Emission Reductions

NOx, tons per day		
2012	2018	2023
0.47	1.31	1.54

SMAQMD

VOC/NOx Measures
Proposed in SMAQMD only

Stationary/Area-wide Measures – Natural Gas Production and Processing

- Baseline emissions in the Sacramento Region, in 2012
  - 0.96 tpd VOC
- Affected sources
  - Production and Processing of natural gas where the VOC content of the fluid in a component is greater than 1%
    - Components include
      - Valves
      - Fittings
      - Pumps
      - Compressors
      - Pressure relief devices
      - Diaphragms
      - Hatches
      - Sight Glass
      - Meters

Stationary/Area-wide Measures – Natural Gas Production and Processing

- Proposed control measure will
  - Establish inspection and repair requirements for leaking components
    - Leaks are defined as more than 3 drops per minute, visible mist, liquid flow or hydrocarbon concentration >1,000 ppmv as methane
  - Audio-visual inspection
    - Once per day
    - Unmanned operations once per week
  - Quantitative inspection
    - Once per quarter
    - Inaccessible components once per year
  - Repair requirements
    - Leak tagged
    - Leak minimized within one hour
    - Components repaired within 2-7 days

Stationary/Area-wide Measures – Natural Gas Production and Processing

- Cost or Cost Effectiveness
  - Estimated overall cost effectiveness is $11,900/ton
- Schedule

District	Adoption	Implement
Sacramento	2008	2009

- Emission Reductions

VOC, tons per day		
2012	2018	2023
0.12	0.12	0.12

Stationary/Area-wide Measures – Unspecified Coatings

- Baseline emissions in the Sacramento Region, in 2012
  - 1.2 tpd VOC
- Affected sources include
  - Manufacturers and distributors of paints and coating materials
  - Coating operations that are not otherwise captured under specific coating rules, including:
    - Glass coatings
    - Plastic coatings
    - Pleasure craft coating
    - Wood flat stock
    - Rubber

Stationary/Area-wide Measures – Unspecified Coatings

- Proposed control measure will establish the following VOC standards:
  - **General VOC content limit** **340 g/l**
  - **Wood flat stock** **250 g/l**
  - **Glass coatings**

One-Component	275 g/l
Two-Component	420 g/l
Mirror Backing, flow	500 g/l
Mirror Backing, roll	430 g/l
Optical	800 g/l
Shock-Free	360 g/l
Metallic	420 g/l

Stationary/Area-wide Measures – Unspecified Coatings

- **Plastic coatings**

General	340 g/l	Metallic	420 g/l
Primer for flexible	490 g/l	Extreme Performance	750 g/l
Color topcoat for flexible	450 g/l	High gloss	420 g/l
Base/Clear Coat for flexible	540 g/l	Optical	800 g/l
Camouflage	420 g/l		
Conductive	325 g/l		

- **Pleasure craft coating**

Extreme high gloss	490 g/l	Antifouling for aluminum	560 g/l
High gloss	420 g/l	Antifouling other	330 g/l
Pretreatment Wash Primer	780 g/l	Clear wood sealer	550 g/l
Finish Primer/surfacer	340 g/l	Clear wood varnish	490 g/l
High Build Surface primer	340 g/l	All other coating	420 g/l
Teak primer	775 g/l		

Stationary/Area-wide Measures – Unspecified Coatings

- Cost or Cost Effectiveness
  - Estimated overall cost effectiveness is $1,000/ton - $6,000/ton
- Schedule

District	Adoption	Implement
Sacramento	2008	2009

- Emission Reductions

VOC, tons per day		
2012	2018	2023
0.17	0.20	0.23

Stationary/Area-wide Measures – Asphalt Concrete

- Baseline emissions in the Sacramento Region, in 2012
  - 0.313 tpd NOx
- Affected sources
  - Asphalt concrete (hot-mix pavement material) facilities that heat aggregate in a rotary dryer

Stationary/Area-wide Measures – Asphalt Concrete

- Proposed measure will
  - Establish a NOx limit of 30 - 36 ppm for the dryer burner
    - This limit can be met with the use of a low NOx burner with flue gas recirculation

- Cost or Cost Effectiveness
  - Estimated overall cost effectiveness is $5,675/ton - $17,417/ton

Stationary/Area-wide Measures – Asphalt Concrete

- Schedule

District	Adoption	Implement
Sacramento	2010	2011

- Emission Reductions

NOx, tons per day		
2012	2018	2023
0.12	0.18	0.20

YSAQMD

VOC/NOx Measures
Proposed in YSAQMD only

Stationary/Area-wide Measures – Graphic Arts

- Baseline emissions in the Sacramento Region, in 2012
  - –2.1 tpd VOC
- Affected sources
  - –Printing operations, screen printers, letter-press operations.

Stationary/Area-wide Measures – Graphic Arts

- Detailed Measure Description
  - Lower the current rule exemption limit from 400 pounds per month to 60 pounds per month. Revise various cleaning solvent VOC limits to match SMAQMD limits.
- Cost or Cost Effectiveness
  - Costs of purchasing and disposing of new lower-VOC products are not expected to increase significantly over current costs.

Stationary/Area-wide Measures – Graphic Arts

- Schedule

District	Adoption	Implement
Yolo-Solano	2008	2009

- Emission Reductions

VOC, tons per day		
2012	2018	2023
0.08	0.08	0.09

Stationary/Area-wide Measures – Boilers, Steam Generators, and Process Heaters

- Baseline emissions in the Sacramento Region, in 2012
  - 2.3 tpd NOx
- Affected sources
  - Hospitals, Universities, Manufacturing/Industrial (food processing, biotech), biomass power generation.

Stationary/Area-wide Measures – Boilers, Steam Generators, and Process Heaters

- Detailed Measure Description
  - District will amend Boiler Rule to incorporate multi-tiered NOx emission limit. Heat input rating > 5 MMBTU and <20 MMBTU will meet 15 ppm NOx. Heat input rating >20 MMBTU will meet 9 ppm NOx.
- Cost or Cost Effectiveness
  - Estimated overall cost effectiveness is $13,934/ton - $25,718/ton

Stationary/Area-wide Measures – Boilers, Steam Generators, and Process Heaters

- Schedule

District	Adoption	Implement
Yolo-Solano	2007	2008

- Emission Reductions

NOx, tons per day		
2012	2018	2023
0.08	0.08	0.08

Regional List of Local Stationary/ Area-wide VOC Measures

Measure	SMAQMD Adoption	EDCAQMD Adoption	FRAQMD Adoption	PCAPCD Adoption	YSAQMD Adoption	VOC 2018
Architectural Coatings	2010	2010	<2012	2012	2010	1.27
Automotive Refinishing	2008	-	2016	2015	2008	0.28
Degreasing/Solvent Cleaning	2007	2011	<2012	-	2007	1.11
Graphic Arts	-	-	-	-	2008	0.08
Natural Gas Processing	2008	-	-	-	-	0.12
Unspecified Coatings	2008	2007	-	-	-	0.20
Total VOC Emission Reduction Benefits, tons/day						3.06

Regional List of Local Stationary/ Area-wide NOx Measures

Measure	SMAQMD Adoption	EDCAQMD Adoption	FRAQMD Adoption	PCAPCD Adoption	YSAQMD Adoption	NOx 2018
Asphalt Concrete	2010	-	-	2013	-	0.18
Boilers, Steam Generators and Process Heaters	-	-	-	-	2007	0.08
IC Engines	2008	-	2010	-	2009	0.15
Water Heaters	2008	2015	2016	2015	2008	1.31
Total NOx Emission Reduction Benefits, tons/day						1.72

Questions and Comments