



Agenda Date: October 20, 2011
Agenda Placement: Regular
Estimated Time: 15 Minutes
Continued Item: No

Board Agenda Item

TO: Air Pollution Control District Board

FROM: Louis D. Van Mullem, Jr., Air Pollution Control Officer

CONTACT: Rebecca Armstrong, 961-8888

SUBJECT: Proposed Amended Rule 352, Natural Gas-Fired Fan-Type Central Furnaces and Small Water Heaters

RECOMMENDATION:

1. Hold a public hearing to receive testimony on proposed amended Rule 352.
2. Approve the Resolution attached to this Board Letter. Approval of the resolution will result in the following actions:
 - A. CEQA Findings: Adopt the CEQA findings (Attachment 1) pursuant to the California Environmental Quality Act (CEQA) and the CEQA guidelines.
 - B. Rule Findings: Adopt the associated rule findings (Attachment 2) in support of the proposed amended Rule 352 pursuant to Health and Safety Code Section 40727 regarding necessity, authority, clarity, consistency, nonduplication, and reference. The rule findings also acknowledge public comments received on the proposed amended rule and adopt the Response to Comments (Attachment 3) as findings of the Board.
 - C. Rule Adoption: Adopt proposed amended Rule 352 (Attachment 4).

EXECUTIVE SUMMARY:

Santa Barbara County Air Pollution Control District's (APCD) Rule 352, *Natural Gas-Fired Fan-Type Central Furnaces and Residential Water Heaters*, regulates oxides of nitrogen (NO_x) emissions from natural gas-fired central furnaces and small water heaters with a heat input rating less than 75,000 British thermal units (Btu) per hour. Rule 352 is a point-of-sale rule.

The 2010 APCD Clean Air Plan (CAP) includes a commitment for the APCD to adopt a control measure for gas-fired small water heaters subject to Rule 352 by reducing the current NOx limit of 55 parts per million (ppm) to 15 ppm. Proposed amended Rule 352 fulfills this commitment. The NOx emission limits for natural gas-fired fan-type central furnaces subject to Rule 352 will remain at 55 ppm.

DISCUSSION:

Background

The 2010 CAP calls for the adoption of CAP control measure N-XC-1 to further control NOx emissions from natural gas-fired small water heaters with a heat input rating less than 75,000 Btu per hour. This control measure would reduce the current small water heater NOx limit of 55 ppm to 15 ppm.

The proposed emission limit revision for small water heaters is consistent with the limits already adopted by the South Coast Air Quality Management District, the Ventura County Air Pollution Control District and the San Joaquin Valley Unified Air Pollution Control District.

The emission limits for central furnaces subject to Rule 352 will remain unchanged at 55 ppm.

Manufacturers have made water heaters which comply with the 15 ppm limit for almost four years. These compliant water heaters have been available in Southern California, Ventura and San Joaquin Valley for some time now and some are already being sold in Santa Barbara County.

Rule 352 Revision

The primary objective of this rule revision project is to reduce small water heater NOx emissions limit from 55 ppm (approximately 40 nanograms per joule) to 15 ppm (approximately 10 nanograms per joule). The revision also adds a sell-through provision that enables distributors to sell existing water heaters that do not meet the 15 ppm limit until July 1, 2012.

APCD staff have revised the title to read “Small” water heaters instead of “Residential” water heaters. As a result, the revised new title is “Natural Gas-Fired Fan-Type Central Furnaces and Small Water Heaters”. This revision was made to include all water heaters of this size (i.e., residential and commercial) in order to have similar requirements as other surrounding Air Districts. Ventura County APCD revised their same size water heater rule last year and also revised their applicability to read “any/all” (as opposed to residential) water heaters.

Staff have also proposed minor editorial revisions for clarity.

Implications for Sources

There are no small water heater manufacturers in Santa Barbara County. In order to comply with the South Coast Air Quality Management District and Ventura County Air Pollution Control District 15 ppm requirement, most manufacturers producing these water heaters have obtained certification from South Coast AQMD that their units meet the 15 ppm NOx emission limit. The amended Rule 352 will accept this certification.

Consequently, sources in Santa Barbara County that need to replace water heaters with new units will be able to purchase compliant units from vendors. This rule revision also does not require that existing units be immediately replaced upon adoption. Rule 352 remains a point-of-sale rule and includes sell-through provision that enables distributors to sell and sources to install units which comply with the current 55 ppm NOx limit until July 1, 2012.

The APCD does not expect there will be any direct effect on the sources of Santa Barbara County due to this revision to Rule 352.

Implications for APCD Budget

APCD staff will not incur additional routine or ongoing costs associated with this rule revision. This rule revision is being applied to an existing point-of-sale rule and will not create additional staff time and costs nor will it affect the APCD budget.

Comparison to Existing Federal Requirements

Pursuant to the Health and Safety Code Section 40727.2(a), the APCD is required to identify any and all existing federal air pollution control requirements that apply to the same equipment or source category as the rule proposed for adoption or modification by the APCD. Section 40727.2(a) also requires the APCD to identify any of the APCD's existing or proposed rule and regulations that apply to the same equipment.

There are no federal regulations that apply to natural gas small water heaters less than 75,000 Btu per hour. Table 1, below, includes a list of the APCD rules and regulations that apply to the same equipment.

Table 1. RULES THAT APPLY TO THE NATURAL GAS-FIRED WATER HEATERS
SUBJECT TO RULE 352

GENERIC REQUIREMENTS	AFFECTED EMISSION UNITS	BASIS FOR APPLICABILITY
Rule 201: Permits Required	All emission units	Emission of pollutants
Rule 202: Exemptions to Rule 201	Applicable emission units	Insignificant activities/emissions per size/rating/function
Rule 210: Fees	All emission units	Administrative
Rule 212: Emission Statements	All emission units	Administrative
Rule 302: Visible Emissions	All emission units	Particulate matter emissions
Rule 303: Nuisance	All emission units	Emissions that can injure, damage or offend.
Regulation VIII: New Source Review	All emission units	Addition of new equipment or modification to existing equipment. Applications to generate ERC Certificates.
Regulation XIII (Rules 1301-1305): Part 70 Operating Permits	All emission units	A stationary source is a major source.

Emission Reductions

As a result of the proposed lower NO_x emission limits, emission reductions will occur over time through the normal rate of replacement of old water heaters. The lifespan of these small water heaters ranges from 10 to 15 years. Staff estimates that the NO_x emissions reduced by this rule change will be an additional 0.0867 tons per day (31.65 tons per year) in 2020 and 0.1653 tons per day (60.33 tons per year) in 2030.

Rulemaking Process and Schedule

Staff prepared the proposed amended Rule 352 and distributed it in July, 2011.

APCD staff informed affected manufacturers, suppliers, installation specialists and associations of this proposed amended rule. The proposed amended Rule 352 was distributed via regular mail to those affected manufacturers, suppliers, and distributors of small water heaters. Additionally, staff posted this proposed amended Rule 352 on the APCD website.

Staff presented the proposed revisions for this rule to the Community Advisory Council (CAC) at their August 10, 2011 meeting. The CAC recommended that the Board adopt the proposed amended Rule 352. The motion passed with a vote of 14:0:0.

Public Review: Public Comments Submitted to Date

Attachment 3 contains written public comments received to date and staff responses. APCD staff has not received any public comments on this amended rule to date.

Cost-Effectiveness

The cost-effectiveness of air pollution control rules is generally specified in terms of cost of compliance per ton of emissions reduced. The South Coast AQMD estimated the cost-effectiveness for the same control measure ranges from \$2,979 to \$9,292 per ton of NOx reduced (based on an incremental cost increase of \$15 to \$50 per unit).

With both Ventura County APCD and South Coast AQMD rules requiring 15 ppm water heaters, manufacturers already make units that comply with the proposed amended Rule 352 NOx limit. Based on information provided by vendors and manufacturers of water heaters, and the fact that the limit in proposed amended Rule 352 is already being achieved in other nearby air districts, there should only be a minor increase in cost for compliant water heaters.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires environmental review for the proposed amendments to Rule 352, Natural Gas-Fired Fan-Type Central Furnaces and Small Water Heaters.

The Santa Barbara County APCD is the lead agency on this project. Proposed amended Rule 352 has been examined in the Environmental Impact Report (EIR) for the 2010 CAP which concluded that the implementation of revised Rule 352 would not result in any significant environmental impacts.

The APCD finds that the 2010 CAP EIR may be used to fulfill the environmental review requirements of the current project. CEQA Guidelines section 15168(c)(2) allows subsequent activities to be approved without the need for a new environmental document if the impacts of those activities were examined in an EIR, and have no new effects or mitigation measures. District staff have evaluated the environmental impacts related to Proposed Amended Rule 352, and have concluded that the environmental impacts were adequately analyzed in the 2010 CAP EIR.

CEQA findings to be adopted by the APCD Board, as well as a discussion of these findings, are provided in Attachment 1.

FISCAL IMPACT:

The APCD cost of implementing proposed amended Rule 352 will not change as a result of this rule revision. This is a point-of-sale rule and as a result, compliant water heaters

will be purchased when existing units need replacement. This normal routine replacement of water heaters will not have any impact on the APCD's budget. The standard APCD fees for certification and/or source testing in Rule 210 will apply for manufacturers to pay for in-house staff review or compliance activities that may be necessary.

SPECIAL INSTRUCTIONS:

Please send a certified minute order and signed resolution to Rebecca Armstrong of the APCD for transmittal to the Air Resources Board.

CONCURRENCES:

County Counsel.

ATTACHMENTS:

Resolution	
Attachment 1:	CEQA Findings
Attachment 2:	Rule Findings
Attachment 3:	Public Comments and Response to Public Comments
Attachment 4:	Proposed Amended Rule 352

BOARD RESOLUTION

**PROPOSED AMENDED RULE 352,
Natural Gas-Fired Fan-Type Central Furnaces and
Small Water Heaters**

October 20, 2011

Santa Barbara County Air Pollution Control District

**260 North San Antonio Road, Suite A
Santa Barbara, California 93110**

(805) 961-8800

**RESOLUTION OF THE AIR POLLUTION
CONTROL DISTRICT BOARD OF THE COUNTY OF
SANTA BARBARA, STATE OF CALIFORNIA**

In the Matter of) **APCD Resolution No.** _____
Adopting Proposed Amended Rule 352)
_____)

RECITALS

1. The Air Pollution Control District Board of the County of Santa Barbara (“Board”) is authorized to adopt, amend, or repeal rules and regulations pursuant to Health and Safety Code section 40725, et seq.

2. Pursuant to Health and Safety Code section 40001, the Board is required to adopt and enforce rules and regulations to achieve and maintain the state and federal ambient air quality standards.

3. The Board has determined that a need exists to amend Rule 352 (Natural Gas-Fired Fan-Type Central Furnaces and Residential Water Heaters) for the purpose of the 2010 Clean Air Act commitment.

NOW, THEREFORE, IT IS HEREBY RESOLVED THAT:

1) This Board has held a hearing and accepted public comments in accordance with the requirements of Health and Safety Code section 40725, et seq.

2) The California Environmental Quality Act (“CEQA”) findings set forth in Attachment 1 of the Board Package dated October 20, 2011 (herein after “Board Package”) are hereby adopted as findings of this Board pursuant to CEQA and the CEQA guidelines.

3) The general rule findings set forth in Attachment 2 of the Board Package are hereby adopted as findings of this Board pursuant to Health and Safety Code section 40727.

4) The Responses to Public Comments set forth in Attachment 3 of the Board Package are hereby adopted as findings of this Board.

5) Rule 352 as set forth in Attachment 4 of the Board Package is hereby adopted as a rule of the Santa Barbara County Air Pollution Control District pursuant to Health and Safety Code section 40725, et seq.

6) The Board authorizes the Control Officer to transmit Rule 352 to the State Air Resources Board in compliance with applicable state and federal law. Additionally, the Board authorizes the Control Officer to do any other acts necessary and proper to obtain necessary approvals of the amended rule by the California Air Resources Board and the United States Environmental Protection Agency.

PASSED AND ADOPTED by the Air Pollution Control District Board of the County of Santa Barbara, State of California, this 20th day of October, 2011, by the following vote:

AYES:

NOES:

ABSTAIN:

ABSENT:

ATTEST:
LOUIS D. VAN MULLEM, JR.
CLERK OF THE BOARD

By _____
Deputy

Chair, Air Pollution Control
District Board of the County of
Santa Barbara

APPROVED AS TO FORM:
DENNIS MARSHALL
SANTA BARBARA COUNTY COUNSEL

By _____
Deputy
Attorneys for the Santa Barbara
Air Pollution Control District

ATTACHMENT 1

CEQA FINDINGS

PROPOSED AMENDED RULE 352,
Natural Gas-Fired Fan-Type Central Furnaces and
Small Water Heaters

October 20, 2011

Santa Barbara County Air Pollution Control District

260 North San Antonio Road, Suite A
Santa Barbara, California 93110

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ATTACHMENT 1

CEQA FINDINGS

The Santa Barbara County Air Pollution Control District (District) found that the potential environmental impacts of revised Rule 352 were adequately described and analyzed in the EIR for the 2010 Clean Air Plan.

The Board finds that:

- Pursuant to Section 15168 (c)(2) of the California Environmental Quality Act this rulemaking activity is within the scope of the 2010 Clean Air Plan Environmental Impact Report and the Environmental Impact Report adequately describes the activity for the purposes of the California Environmental Quality Act.
- Pursuant to Section 15168 (c)(2) of the California Environmental Quality Act, the revisions to Rule 352 were examined in the program Environmental Impact Report for the 2010 Clean Air Plan, and no new effects could occur and no new mitigation measures are required. Therefore, no new environmental document is required.
- The Environmental Impact Report for the 2010 Clean Air Plan was previously determined by this Board to have been completed in compliance with the California Environmental Quality Act and was reviewed and considered by the Board prior to approval.
- Any subsequent changes to the project description during the public review period will undergo additional environmental review under the California Environmental Quality Act if it is determined that the changes are outside the scope of the 2010 Clean Air Plan Environmental Impact Report.

ATTACHMENT 2

RULE FINDINGS

**PROPOSED AMENDED RULE 352,
Natural Gas-Fired Fan-Type Central Furnaces and
Small Water Heaters**

October 20, 2011

Santa Barbara County Air Pollution Control District

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ATTACHMENT 2

RULE FINDINGS FOR PROPOSED AMENDED RULE 352

Pursuant to California Health and Safety Code Section 40727, the Board makes the following findings for the adoption of Proposed Amended Rule 352, Natural Gas-Fired Central Furnaces and Small Water Heaters.

Necessity

The Board determines that it is necessary to adopt Proposed Amended Rule 352, *Natural Gas-Fired Fan-Type Central Furnaces and Small Water Heaters* to fulfill commitments in the SBCAPCD 2010 Clean Air Plan.

Authority

The Board is authorized under state law to adopt, amend, or repeal rules and regulations pursuant to Health and Safety Code Section 40000, and 40725 through 40728 which assigns to local and regional authorities the primary responsibility for the control of air pollution from all sources other than exhaust emissions from motor vehicles. Additionally, pursuant to Health and Safety Code Section 40702, the District Board is required to adopt rules and regulations and to do such acts as are necessary and proper to execute the powers and duties granted to it and imposed upon it by State law.

Clarity

The Board finds that Proposed Amended Rule 352 is sufficiently clear. This rule was publicly noticed, and reviewed by the Community Advisory Council. The rule is written or displayed so that persons directly affected by it can easily understand its meaning.

Consistency

The Board determines that Proposed Amended Rule 352 is consistent with, and not in conflict with or contradictory to, existing federal or state statutes, court decisions, or regulations.

The air pollution control districts throughout the state of California that have water heater rules for this size of units have adopted similar rule revisions. Based on this evidence, the Board finds that the rules are consistent with neighboring air pollution control districts.

Nonduplication

The Board finds that Proposed Amended Rule 352, *Natural Gas-Fired Fan-Type Central Furnaces and Small Water Heaters* does not impose the same restrictions as any existing state or federal regulation, and the proposed rule is necessary and proper to execute the powers and duties granted to, and imposed upon, the District.

Reference

The Board finds that we have authority under state law to adopt Rule 352 pursuant to Health and Safety Code Section 39002 which assigns to local and regional authorities the primary responsibility for the control of air pollution from all sources other than exhaust emissions from motor vehicles. Additionally, pursuant to Health and Safety Code Section 40702, the Board is required to adopt rules and regulations and to do such acts as are necessary and proper to execute the powers and duties granted to it and imposed upon it by state law.

Public Comment

Response to Comments

The Board has reviewed the response to comments included in Attachment 3 and hereby approves those responses to comments as findings.

ATTACHMENT 3

PUBLIC COMMENTS
and RESPONSE TO PUBLIC COMMENTS ON

PROPOSED AMENDED RULE 352,
Natural Gas-Fired Fan-Type Central Furnaces and
Small Water Heaters

October 20, 2011

Santa Barbara County Air Pollution Control District

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ATTACHMENT 3

PUBLIC COMMENTS PROPOSED AMENDED RULE 352, NATURAL GAS-FIRED FAN-TYPE CENTRAL FURNACES AND SMALL WATER HEATERS

As of October 5, 2011, the District has received no public comments on this proposed amended rule.

ATTACHMENT 3 (continued)

**DISTRICT RESPONSE TO PUBLIC COMMENTS
PROPOSED AMENDED RULE 352, NATURAL GAS-FIRED FAN-TYPE
CENTRAL FURNACES AND SMALL WATER HEATERS**

As of October 5, 2011, the District has received no public comments on this proposed amended rule.

ATTACHMENT 4

PROPOSED AMENDED RULE 352,
Natural Gas-Fired Fan-Type Central Furnaces and
Small Water Heaters

October 20, 2011

Santa Barbara County Air Pollution Control District

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Santa Barbara, California 93110

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RULE 352. NATURAL GAS-FIRED FAN-TYPE CENTRAL FURNACES AND ~~RESIDENTIAL~~ SMALL WATER HEATERS. (Adopted 9/16/1999, and [date of amended rule adoption])

A. Applicability

This ~~R~~rule applies to any person who manufactures, supplies, sells, offers for sale, installs, or solicits the installation of any natural gas-fired fan-type central furnaces or ~~residential~~ water heaters for use within the District.

B. Exemptions

The provisions of this ~~R~~rule shall not apply to:

1. Units installed in manufactured housing (mobile homes).
2. Water heaters used exclusively in recreational vehicles.
3. Water heaters with a rated heat input of 75,000 British thermal units per hour or greater.
4. Water heaters used exclusively to heat swimming pools or hot tubs.
5. Fan-type central furnaces and ~~residential~~ water heaters using fuels other than natural gas.

C. Definitions

“Fan-Type Central Furnace” means a self-contained space heater providing for circulation of heated air at pressures other than atmospheric through ducts more than 10 inches in length that has a rated heat input capacity of less than 175,000 British thermal units per hour and, for combination heating and cooling units, a rated cooling capacity of less than 65,000 British thermal units per hour.

“Heat Output (Central Furnace)” means the product obtained by multiplying the annual fuel utilization efficiency as defined by Section 10.1 of the Code of Federal Regulations (CFR), Title 10, Part 430, Subpart B, Appendix N, by the rated heat input capacity of the natural gas-fired central furnace.

“Heat Output (Water Heater)” means the product obtained by multiplying the recovery efficiency as defined by Section 6.1.3 of 10 CFR 430, Subpart B, Appendix E, by the rated heat input capacity of the water heater.

“Manufactured Home” has the same meaning as defined in 42 United States Code Section 5402 and California Health and Safety Code Section 18007.

“Natural Gas” means a mixture of gaseous hydrocarbons containing at least 80% methane by volume as determined by ~~American Society for Testing and Materials~~ ASTM Method D-1945-6403(2010), “Standard Test Method for Analysis of Natural Gas by Gas Chromatography,” ASTM International.

“Rated Cooling Capacity” means the cooling capacity specified on the nameplate of the cooling unit. Cooling capacity is the amount of heat energy the cooling system can displace in one hour (British thermal units per hour).

“Rated Heat Input Capacity” means the heat input capacity specified on the nameplate of the combustion unit. Heat input is the amount of energy consumed in one hour (British thermal units per hour).

“Water Heater” means a device that heats water at a thermostatically-controlled temperature of no more than 210 degrees Fahrenheit for delivery on demand.

D. Requirements – General

1. Except as specified in Section D.2, No person shall supply, sell, offer for sale, install, or solicit the installation of any natural gas-fired fan-type central furnace or residential water heater for use within the District:
 - 1a. With emissions of oxides of nitrogen in excess of 40 nanograms per joule (0.093 pounds of oxides of nitrogen per million British thermal units) of heat output, or 55 parts per million at 3.00 percent stack gas oxygen by volume on a dry basis, and-
 - 2b. That is not certified in accordance with Section E.
2. After July 1, 2012, no person shall supply, sell, offer for sale, install, or solicit the installation of any natural gas-fired water heater for use within the District:
 - a. With emissions of oxides of nitrogen in excess of 10 nanograms per joule (0.023 pounds of oxides of nitrogen per million British thermal units) of heat output, or 15 parts per million at 3.00 percent stack gas oxygen by volume on a dry basis, and
 - b. That is not certified in accordance with Section E.

E. Requirements – Certification and Identification

1. Each appliance model shall be tested in accordance with Section F. In lieu of such certification tests, the District will accept certifications issued under ~~El Dorado County Air Pollution Control District Rule 239; Kern County Air Pollution Control District Rule 424; Bay Area Air Quality Management District Regulation 9, Rule 6 or Regulation 9, Rule 4; Placer County Air Pollution Control District Rule 246; Sacramento Metropolitan Air Quality Management District Rule 414; San Diego County Air Pollution Control District Rule 69.5 or Rule 69.6; San Joaquin Valley Unified Air Pollution Control District Rule 4902; San Luis Obispo County Air Pollution Control District Rule 428; South Coast Air Quality Management District Rule 1111 or Rule 1121; Ventura County Air Pollution Control District Rule 74.11 or 74.22, or Yolo Solano County Air Pollution Control District Rule 2.37.~~
2. The central furnace manufacturer and water heater manufacturer shall display the model number of the appliance complying with Section D-1 on the shipping carton and the rating plate of the appliance.
3. Upon request of the Control Officer, each manufacturer shall submit to the District a statement confirming the appliance subject to this ~~R~~rule is in compliance with the emission limit specified in Section D-1. The statement shall be signed, dated, and shall attest to the accuracy of all information. The statement shall include:
 - a. Name and address of manufacturer, and
 - b. Brand name, and
 - c. Model number, as it appears on the appliance rating plate, and
 - d. Heat input rating, British thermal units per hour, and
 - e. A source test report verifying compliance with the applicable emission limits in Section D.1.a or D.2.a.

F. Monitoring – Source Testing

1. During testing, each tested central furnace shall be operated in accordance with the procedures specified in 10 CFR 430, Subpart B, Appendix N.
2. During testing, each water heater shall be operated in accordance with Section 2.4 of American National Standards ANSI Z21.10.1-1998 at normal pressure, input rates, and with a five-foot stack installed during the oxides of nitrogen emissions tests.
3. Compliance with the oxides of nitrogen emission requirement in D-1 shall be determined using Air Resources Board Method 100, or Environmental Protection Agency Methods 7E and 3A.
4. The following calculation shall be used to determine the nanograms of oxides of nitrogen per joule of heat output:

$$N = \frac{4.566 \times 10^4 \times P \times U}{H \times C \times E}$$

where:

4.566×10^4 = unit conversion factor [parts per million (ppm) to nanograms and British thermal units to joules]

N = nanograms of emitted oxides of nitrogen per joule of heat output

P = concentration of oxides of nitrogen in flue gas in ppm by volume

U = dry volume percent of CO₂ in flue gas necessary for stoichiometric combustion

H = gross heating value of fuel, British thermal units per cubic feet at 60°F and 30 inches of mercury

C = measured dry volume percent of CO₂ in the flue gas, assuming complete combustion and no carbon monoxide present

E = efficiency, annual fuel utilization efficiency for natural gas-fired central furnaces or recovery efficiency for water heaters as referenced in the Section C definitions for *heat output (central furnace)* or *heat output (water heater)*.

G. Rule Effective Date

This ~~Rule~~ is effective on ~~September 16, 1999~~ [date of amended rule adoption].

APPROVED AS TO FORM:

DENNIS MARSHALL
SANTA BARBARA COUNTY COUNSEL

By _____
Deputy
Attorneys for the Santa Barbara
Air Pollution Control District