Santa Barbara County
Air Pollution Control District

MEMORANDUM

TO: Community Advisory Council Members

FROM: Doug Grapple

DATE: January 30, 2013

SUBJECT: 2013 Clean Air Plan, Chapter 4, Emission Control Measures

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Enclosed please find draft Chapter 4 of the 2013 Clean Air Plan. This chapter addresses stationary source emission control measures to further reduce reactive organic compound (ROC) and nitrogen oxides (NOx) emissions, and largely defines our State ozone attainment strategy over the next several years.

The District plans to discuss this chapter at the February 13, 2013, Community Advisory Council meeting, which will be informational only (i.e., no formal recommendation sought).

Thereafter, we envision at least one more meeting with the Community Advisory Council before requesting a CAC recommendation in May 2013 that the Board approve the entire 2013 Clean Air Plan. Our proposed schedule is to take the Clean Air Plan to the Board for a Public Hearing and adoption in June 2013.

If there are questions or concerns you would like to discuss beforehand, please call me at (805) 961-8883 or send an email to grappled@sbcapcd.org.

Attached:

Draft Chapter 4 of the 2013 Clean Air Plan

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4. EMISSION CONTROL MEASURES

4.1 INTRODUCTION

This chapter summarizes emission control measures adopted and proposed by the Santa Barbara County Air Pollution Control District (District) to reduce ROC or NO_x emissions, and identifies additional ***stationary source*** control measures for further study. This chapter also addresses the state triennial plan assessment and update requirements specified in Health and Safety Code Sections 40924 and 40925. Control measures that focus on reducing local transportation-related emissions are discussed in *Chapter 5 – Transportation Control Measures*.

Control measures are evaluated and classified as *adopted*, *proposed*, *contingency*, or *further study*, based on an analysis of the measures' applicability to Santa Barbara County, potential emission reductions, and the implementation of similar measures in other areas of California. The following describes the control measure classes:

- ***Adopted*** control measures are those that the District has formally adopted as District rules. Table 4-1 identifies the control measures adopted or modified within the reporting period (2010 to 2012) for this 2013 Clean Air Plan (Plan).
- ***Proposed*** control measures are those that the District plans to adopt for the purposes of 1) maintaining the state 1-hour ozone standard, and 2) attaining the state 8-hour ozone standard. These measures are scheduled as either near-term (2013 to 2015) or mid-term (2016 to 2018). Table 4-2 shows the proposed control measures for this Plan.
- ***Contingency*** control measures are those that are required by Section 40915 of the Health and Safety Code.
- ***Further study*** measures are emission-reduction techniques that the District plans to investigate further before making a commitment to adopt them in our next triennial plan update and revision. Table 4-4 identifies the control measures for further study. Several of the listed measures have been found not to be cost-effective at this time, but they have been included as further study measures for possible future consideration.

4.2 EMISSION CONTROL MEASURE MANDATES

Under the California Clean Air Act, each air district that is nonattainment for the state ozone standards must demonstrate a five percent reduction in emissions per year or adopt every feasible measure available to that district.[a] The District has taken the approach of evaluating and adopting every feasible measure since the 1991 Air Quality Attainment Plan failed to produce the state mandated five percent per year emission reductions and was approved by ARB under the every feasible measure option.

To ensure that the District has adopted or has proposed to adopt every feasible measure, staff did the following:

[a] Health and Safety Code Section 40914(b).

1. Compared the District's rules to rules of other California air districts using ARB's document titled, "Identification of Performance Standards," April 1999, which evaluates emission control measures adopted throughout the state.

2. Reviewed and considered information provided in the California Air Pollution Control Officer Association document titled, "Potential All Feasible Measures," September 2003.

3. Considered the cost-effectiveness of the measures.

Furthermore, for proposed control measures (Table 4-2), if an analysis performed during the rulemaking process indicates that the cost-effectiveness of a measure is too high, the District will not move forward with adopting the new or revised rule.

The control measure requirements (e.g., ppm limits, grams/liter ROC-content limits) indicated in this Plan are subject to change when the actual rulemaking efforts are undertaken. The District is using the figures herein to develop emission reduction estimates required to be in the Plan by ARB and to give a general indication of today's limits necessary to comply with the "every feasible measure" mandate. However, there could be technological advancements between the time of adoption of this 2013 Clean Air Plan the time when the District begins to undertake the rulemaking effort, which would lower the emission limits or other limits used in this Plan. The rulemaking staff will consider such improvements in technology and lower emission limits or other limits found in other air district rules during the rule development process.

4.3 EMISSION CONTROL MEASURES ADOPTED OR SCHEDULED FOR ADOPTION DURING THE REPORTING PERIOD (2010 TO 2012)

Rulemaking activities during the 2010 to 2012 period focused on revisions to control measure N-XC-1 (Rule 352), R-SL-2 (Rule 321), R-SC-2 (Rules 330 and 337), R-SL-5 (Rule 349) and R-SL-9 (Rule 353). In addition to these control measures, several other rulemaking projects and mandates displaced staff from revising control measures originally scheduled in the 2010 Clean Air Plan. These included:

- ❖ Rule 334 (repealed)
- ❖ Rules 102 & 202 (amended to implement the California regulation on reducing greenhouse gases from semiconductor operations)
- ❖ Rule 901 (amended to update references to the New Source Performance Standards)
- ❖ Rules 102, 202, 370, 810, and 1301 (amended four rules and added new Rule 810 to implement EPA's federal Prevention of Significant Deterioration and Part 70 Greenhouse Gas Tailoring Rule)

The District has identified 1) the *expected* emission reductions that were in the 2010 Clean Air Plan and 2) the current *revised* emission reductions for each measure scheduled for adoption in the 2010 Clean Air Plan during the 2010 to 2012 reporting period.[a] This information is shown in Table 4-1.

[a] Health and Safety Code Section 40924(b)(2) requires the District to provide this information.

DATA FOR TABLE 4-1, EMISSION CONTROL MEASURES ADOPTED OR SCHEDULED FOR ADOPTION DURING THE REPORTING PERIOD (2010-2012)

Rule	Control Measure ID	Description	Scheduled Rule Adoption Date	Actual Rule Adoption Date	Pollutant	Cost-Effectiveness (Dollars per Ton of Emissions Reduced)	2010 Clean Air Plan Expected Emission Reductions, Tons/Day (Tons/Year)[a]	Revised Emission Reductions, Tons/Day (Tons/Year)	
								2020	2030
321 (Revised)	R-SL-2	Solvent Cleaning Machines and Solvent Cleaning	2007[b]	September 2010	ROC	-3,310 to 12,940	0.5261 (192.0187)	0.4839 (176.6129)	0.4795 (175.0225)
330 (Revised)	R-SC-2	Surface Coating of Metal Parts and Products (Revisions to Include Solvent Cleaning Requirements)	2010-2012	June 2012	ROC	-243 to 4,744	0.0212 (5.5146)	0.0222 (5.7769)	0.0220 (5.7249)
337 (Revised)	R-SC-2	Surface Coating of Aircraft or Aerospace Vehicle Parts and Products (Revisions to Include Solvent Cleaning Requirements)	2010-2012	June 2012	ROC	0	0.0006 (0.1482)	0	0
342 (Revised)	N-XC-4 and N-XC-5	Revisions to Reduce the NOx Limits to 15 ppmv at 3% Oxygen for Boilers, Steam Generators and Process Heaters Greater than or Equal to 5 MMBtu/hr	2010-2012	Not yet adopted	NOx	N/A[c]	0.0080 (2.9345)	N/A[c]	N/A[c]
349 (Revised)	R-SL-5	Polyester Resin Operations (Revisions to Include Solvent Cleaning Requirements)	2010-2012	June 2012	ROC	0	0.0058 (1.4964)	0 (0)	0 (0)
351 (Revised)	R-SC-5	Coating of Wood Products (Revisions to Include Solvent Cleaning Requirements)	2010-2012	Not yet adopted	ROC	477 to 909	0.0019 (0.6936)	0.0023 (0.6088)	0.0023 (0.6033)

[a] The figures shown are for planning year 2020.
[b] Delayed from the schedule shown in the 2007 Clean Air Plan.
[c] Not applicable because the control measure has been moved to the *further study* category.

DATA FOR TABLE 4-1, EMISSION CONTROL MEASURES ADOPTED OR SCHEDULED FOR ADOPTION DURING THE REPORTING PERIOD (2010-2012)

Rule	Control Measure ID	Description	Scheduled Rule Adoption Date	Actual Rule Adoption Date	Pollutant	Cost-Effectiveness (Dollars per Ton of Emissions Reduced)	2010 Clean Air Plan Expected Emission Reductions, Tons/Day (Tons/Year)[a]	Revised Emission Reductions, Tons/Day (Tons/Year)	
								2020	2030
352 (Revised)	N-XC-1	Residential Water Heaters; Residential and Commercial Space Heaters (Revision Reduced the NOx Limits on the Residential Water Heaters to 15 ppmv)	2013-2015	October 2011	NOx	2,979 to 9,292	0.0660 (24.0743)	0.0967[b] (35.2949)[b]	0.1406 (51.3036)
353 (Revised)	R-SL-9	Adhesives and Sealants	2010-2012	June 2012	ROC	-194 to 3,036	0.0050 (1.8246)	0.0029 (1.0421)	0.0028 (1.0328)
354 (Revised)	R-SL-7	Graphic Arts and Paper, Film Foil, and Fabric Coatings (Revisions to Rule 354 to Include Solvent Cleaning and Additional Requirements for Rotogravure, Flexographic, Lithographic, Letterpress, and Screen Printing)	2010-2012	Not yet adopted	ROC	1,002 to 3,130	0.0579 (21.1404)	0.0552 (20.1444)	0.0612 (22.3507)
						Totals for ROC.[c]	0.6184 (222.6371)	0.5665 (204.1852)	0.5679 (204.7341)
						Totals for NOx.[c]	0.0707 (25.8030)	0.0967 (35.2949)	0.1406 (51.3036)

[a] The figures shown are for planning year 2020.
[b] The Rule 352 figures are based on 80% rule implementation in planning year 2020.
[c] Totals may not appear to be correct due to rounding.

4.4 PROPOSED AND CONTINGENCY EMISSION CONTROL MEASURES

The proposed control measures are summarized in Table 4-2. Each of the proposed measures in Table 4-2 were contained in prior Clean Air Plans, but have yet to be revised. These control measures are scheduled as either near-term (2013-2015) or mid-term (2016-2018).

TABLE 4-2
PROPOSED EMISSION CONTROL MEASURES

Rule (Status)	Control Measure ID	Description	Adoption Schedule	Cost-Effectiveness (Dollars per Ton of Emissions Reduced)	Emission Reductions in Tons per Day (Tons per Year) from the Control Measure[a]	
					ROC	NO_X
321 (Revised)	R-SL-2	Solvent Cleaning Machines and Solvent Cleaning (Revisions to Lower ROC-Content Limits).	2013 - 2015	0	0.0251 (9.1575)	—
323 (Revised)	R-SC-1	Architectural Coatings (Revisions to Include Solvent Cleaning Requirements and any New or Modified State Suggested Control Measure Provisions).	2013 - 2015	536 to 6,059	0.1296 (47.3009)	—
325, 326, 343, & 344 (Revised)	R-PP-1, R-PT-1, and R-PT-2	Crude Oil Production and Separation and Storage of Reactive Organic Compound Liquids; Petroleum Tank Degassing; and Petroleum Sumps, Pits and Well Cellars [Add Solvent Cleaning Provisions (e.g., Solvent with 25 grams of ROC per liter or less), Cleaning Machines Need to Comply with Rule 321, etc.].	2016 - 2018	606	0.0128 (4.6582)	—
351 (Revised)	R-SC-5	Surface Preparation and Coating of Wood Products (Revisions to Include Solvent Cleaning Requirements and to Incorporate any New or Modified State Suggested Control Measure Provisions).	2013 - 2015	477 to 909	0.0023 (0.6088)	—
354 (Revised)	R-SL-7	Graphic Arts and Paper, Film Foil, and Fabric Coatings (Revisions to Rule 354 to Include Solvent Cleaning and Additional Requirements for Rotogravure, Flexographic, Lithographic, Letterpress, and Screen Printing).	2016 - 2018	1,000 to 3,130	0.0552 (20.1444)	—
360 (Revised)	N-XC-2	Revisions to Reduce the NOx Limits to 20 ppmv at 3% Oxygen for Large Water Heaters and Small Boilers Rated 0.075 MMBtu/hr to 2 MMBtu/hr.	2013 - 2015	2,683 to 17,888	—	0.0140[b] (5.1080)[b]

[a] With the exception of Rule 360, the figures shown are for planning year 2020 with 100% rule implementation. The Rule 360 figure is for planning year 2030 with 70% rule implementation.
[b] Emission Reductions are for planning year 2030 with 70% rule implementation.

TABLE 4-2
PROPOSED EMISSION CONTROL MEASURES

Rule (Status)	Control Measure ID	Description	Adoption Schedule	Cost-Effectiveness (Dollars per Ton of Emissions Reduced)	Emission Reductions in Tons per Day (Tons per Year) from the Control Measure[a]	
					ROC	NO_X
Totals for ROC.[b]				—	0.2250 (81.8699)	—
Totals for NOx.[b]				—	—	0.0140 (5.1080)

A contingency measure, as required by Health and Safety Code Section 40915, is shown in Table 4-3. The Enhanced Motor Vehicle Inspection and Maintenance program measure is carried over from the 2010 Plan.

TABLE 4-3
CONTINGENCY MEASURE

Measure	Description
Motor Vehicle Inspection and Maintenance (T-21)[c]	Enhanced Motor Vehicle Inspection and Maintenance program. The overall cost effectiveness of the Enhanced I & M program is $5,300 dollars per ton of hydrocarbon and NOx reduced (2004 dollars).

[a] With the exception of Rule 360, the figures shown are for planning year 2020 with 100% rule implementation. The Rule 360 figure is for planning year 2030 with 70% rule implementation.
[b] Totals may not appear to be correct due to rounding.
[c] This contingency measure was shown in the 2010 Clean Air Plan's chapter 5, Transportation Control Measures.

4.5 EMISSION CONTROL MEASURES FOR FURTHER STUDY

A possible new control measure and modifications to existing control measures that merit further study are shown in Table 4-4 (Further Study).

TABLE 4-4
FURTHER STUDY

Rule	Control Measure ID	Description	Comments	Other Air District Rule that could be used as a model for a SBCAPCD Rule
—	—	Organic Material Composting Operations	The composting measure would limit emissions of reactive organic compounds from commercial composting operations.	San Joaquin Valley Unified APCD Rule 4566.
316	R-PM-2	Storage and Transfer of Gasoline - Gasoline Dispensing Phase I	Delete the Rule 316, Section I.2 exemption. Currently, this provision exempts agricultural operations from vapor recovery system requirements if more than 50 percent of the annual throughput is used to fuel implements of husbandry.	South Coast AQMD Rule 461.
342	N-XC-4 and N-XC-5	Boilers, Steam Generators and Process Heaters Greater than or Equal to 5 MMBtu/hr	Reduce the NOx Limit to 15 parts per million by volume at 3 percent oxygen or less.	South Coast AQMD Rule 1146 and San Joaquin Valley Unified APCD Rule 4306.
361	N-XC-4	Small Boilers, Steam Generators, and Process Heaters (Greater than 2 MMBtu/hr to Less than 5 MMBtu/hr)	Reduce the NOx Limit to 12 parts per million by volume at 3 percent oxygen or less.	South Coast AQMD Rule 1146.1 and San Joaquin Valley Unified APCD Rule 4307.

4.6 CONCLUSION

The Plan control measures include controls over a range of categories that contribute NOx and ROC emissions (e.g., water heaters and use of solvents, coatings, and inks). The control measures evaluated and identified in this chapter, combined with the emissions reductions expected from on-road mobile sources in *Chapter 5, Transportation Control Measures*, show that Santa Barbara County is making significant progress in reducing emissions from sources subject to our control.