MEMORANDUM

TO: Community Advisory Council Members

FROM: Douglas Grapple

DATE: September 9, 2009

SUBJECT: Request for Steering Recommendations on Key Issues Relative to Proposed Amended Rule 321, Solvent Cleaning Machines and Solvent Cleaning, Rule 102, Definitions, and Rule 202, Exemptions from Rule 201

The Santa Barbara County Air Pollution Control District (District) is seeking recommendations from the Community Advisory Council on two key aspects of the Rule 321 project:

1. Should the District make Rule 321 applicable to solvents containing a toxic air contaminant in excess of two percent?

2. Should the Rule 202 exemption text and the Rule 321 "general solvent use" limit indicate 25 or 50 grams of reactive organic compounds (ROCs) per liter?

The following background information is provided for your consideration.

Background:

The District made a draft Rule 321 available for review in mid-May and held a workshop on June 25, 2009. During the workshop, the regulated community requested that the District provide additional detailed support materials. The rulemaking staff is in the final stages of preparing those documents. Additional tasks on the project include responding to comments, revising the draft rules, and updating the Background Paper.

The District continues to work closely with stakeholders on specific issues. Rulemaking staff is seeking recommendations from the CAC on the two key aspects listed above to help define the scope of the project.

Inclusion of Toxic Air Contaminants (TACs) in the Project[1]

The District has proposed that TACs be included in the Rule 321 project. Provisions on TACs would be integrated through revisions to Rules 102 and Rule 321, as follows:

Rule 102

"Solvent" means any liquid containing any reactive organic compound or any toxic air contaminant, which is used as a diluent, thinner, dissolver, viscosity reducer, cleaning agent, drying agent, or other similar uses.

Rule 321.B

Except as otherwise specifically provided herein, the provisions of this rule shall not apply to the following:

1. Any solvent cleaning machine equipped with and any solvent cleaning performed with a solvent (including emulsions) that contains two percent by weight or less of each of the following:

    a. Reactive organic compounds (as determined by Environmental Protection Agency method 24), and

    b. Toxic air contaminants (as determined by generic solvent data, solvent manufacturer's composition data or by a gas chromatography test and a mass spectrometry test).

District Justification for Including TACs in the Project

a. Including TACs in the term *solvent* is necessary so that Rule 321 control techniques will apply to cleaning agents that would otherwise be exempt from the rule. The District wants Rule 321 to apply to non-ROC solvents such as methylene chloride and other TAC solvents not covered by the federal requirements. This is consistent with the District's authority and efforts to protect the people and the environment from the harmful effects of air pollution.

b. The District has seen that the adoption of some new and revised rules for reducing ROC emissions had the tendency to increase TAC emissions. For example, coating manufacturers complying with ROC limits may replaced ROC materials with non-ROC, TAC materials in their coatings. By including TACs in the *solvent* definition and revising 321.B.1 as

[1] A list of toxic air contaminants is provided in Attachment 1.

shown above, there should not be a significant increase in TAC emissions from the revised Rule 321.

c. The proposed amendments to cold and vapor solvent cleaning machine requirements will reduce toxic risks from the use of TAC solvents by requiring the use of airless/air-tight solvent cleaning machines or through substitution of alternative solvents or process changes.

d. The Environmental Impact Report for the 1991 Santa Barbara County Air Quality Attainment Plan, indicated in Chapter 4, Project Impacts and Mitigation Measures, under the "Reformulation (RE)" category, "MITIGATION: None required; however avoiding the use of potentially toxic compounds as solvent and coating substitutes would result in a net benefit." The District believes that by making Rule 321 requirements applicable to TAC solvents, the rule revision will be consistent with the findings in the 1991 EIR.

Stakeholder Concerns About Including TACs in the Project

a. Industry representatives point out that the District is promulgating the Rule 321 revisions in response to an ROC control measure in a Clean Air Plan; not as a toxic air contaminant control measure. Further, CARB or the District should first have an air toxic control measure (ATCM) for solvent cleaning machines and solvent cleaning and then propose to adopt the ATCM as a rule.

b. Members of the regulated community indicate that the proposed amended Rule 321 is too complicated. Including TACs only complicates things more. By removing this aspect from the project, the rules become simpler.

c. Other air district solvent rules allow the use of non-ROC solvents that contain TACs. Their rules exempt solvent cleaning machines and solvent cleaning that use such solvent from their requirements. By excluding TACs from the project, the District will be generally consistent with the approach used by most of the other air districts.

Exemption and Prohibitory Rule Requirements Based on 25 or 50 Grams per Liter

The District proposed that Rule 202 exemption text and the Rule 321 "general solvent use" ROC limit be 50 grams per liter (gr/l). The following shows where the Rule 202 and the Rule 321 text refer to 50 gr/l:

Rule 202:

I. Coatings Applications Equipment and Operations

The following listed coating applications equipment and operations are exempt from permit requirements. [. . .]

3. Equipment used in surface coating operations provided that the total amount of coatings and solvents used does not exceed 55 gallons per year. [. . .] Cleaning agents meeting the criteria of Section U.2.b or Section U.2.c or that have a reactive organic compound content of 50 grams per liter or less, as determined by the Environmental Protection Agency Reference Method 24, do not contribute to the 55 gallons per year per stationary source limitation. [. . .]

U. Solvent Application Equipment and Operations [. . .]

2. Single solvent cleaning machines, which use unheated solvent, and which: [. . .]

d. The liquid surface area of any solvent cleaning machine using the following solvent(s) shall not be counted towards the 0.929 square meter (10 square feet) aggregate limit in subsection a above:

1) Any solvent that has a reactive organic compound content of 50 grams per liter or less, as determined by the Environmental Protection Agency Method 24.

2) Any solvent exempt pursuant to subsection b or subsection c above.

3. Wipe cleaning operations, provided that the solvents used do not exceed 55 gallons per year per stationary source and that the solvent cleaning complies with the requirements in Rule 321, Solvent Cleaning Machines and Solvent Cleaning. [. . .]

Solvents meeting the criteria of 2.b. or c. above or that have a reactive organic compound content of 50 grams per liter or less, as determined by the Environmental Protection Agency Reference Method 24, do not contribute to the 55 gallons per year per stationary source limitation.

Rule 321:

H. Additional Equipment Requirements for Remote Reservoir Cold Cleaning Machines. Any person who owns, operates, or uses any remote reservoir cold cleaning machine shall ensure that it is equipped with the following: [. . .]

7. Effective [*one year from the date of revised rule adoption*], except when using an emission control system that meets the requirements of Section N, solvent that contains 50 grams of reactive organic compound per liter of material or less. [. . .]

I. Additional Equipment Requirements for Batch Cold Cleaning Machines. Any person who owns, operates, or uses any batch cold cleaning machine other than a remote reservoir cold cleaning machine shall ensure that it is equipped with the following: [. . .]

7. Effective [*one year from the date of revised rule adoption*], except when using an emission control system that meets the requirements of Section N, solvent that contains 50 grams of reactive organic compound per liter of material or less. [. . .]

K. Additional Equipment Requirements for In-Line Cold Cleaning Machines. Any person who owns, operates, or uses any batch in-line cold cleaning machine shall ensure that it is equipped with the following: [. . .]

6. Effective [*one year from the date of revised rule adoption*], except when using an emission control system that meets the requirements of Section N, solvent that contains 50 grams of reactive organic compound per liter of material or less. [. . .]

M. Requirements - Solvent Cleaning. [. . .]

Table 1: Reactive Organic Compound Content Limits for Solvent Cleaning

SOLVENT CLEANING ACTIVITY	ROC Limit, grams of ROC per liter of material (pounds of ROC per gallon[1])
(a) Product Cleaning During Manufacturing Processes and Surface Preparation for Coating Application:	
(i) General	50 (0.42)
(ii) Electrical Apparatus Components & Electronic Components	900 (7.51)
(iii) Medical Devices & Pharmaceuticals	900 (7.51)
(b) Repair Cleaning and Maintenance Cleaning:	
(i) General	50 (0.42)
(ii) Electrical Apparatus Components & Electronic Components	900 (7.51)
(iii) Medical Devices & Pharmaceuticals:	
(I) Tools, Equipment, & Machinery	900 (7.51)
(II) General Work Surfaces	900 (7.51)
(c) Cleaning of Coatings Application Equipment	950 (7.93)

[1] English units are provided for information only.

SOLVENT CLEANING ACTIVITY	ROC Limit, grams of ROC per liter of material (pounds of ROC per gallon[1])
(d) Cleaning of the Following Items and Equipment and their Components: (i) Aerospace Vehicles; (ii) Aerospace Vehicle Payloads and Satellites; (iii) Aerospace Vehicle, Aerospace Vehicle Payload, and Satellite: (I) Transport Equipment (e.g., railcars, trucks, trailers, forklifts, and containers), and (II) Support Processing Equipment (e.g., payload fairing fixtures, alignment jigs, fuel and oxidizer loading carts and associated transfer lines).	900 (7.51)

In addition, several proposed amended Rule 321 exemptions and requirements include a 50 gr/l provision.[1]

The District is considering changing the Rule 202 and 321 provisions from 50 gr/l to 25 gr/l at the recommendation of both the Air Resources Board and the Environmental Protection Agency.

Analysis indicates that the estimated emissions reductions under the two scenarios for years 2015 and 2020 would be:

SCENARIO	PROJECTED EMISSION REDUCTIONS, tons per day (tons per year)	
	2015	2020
50 grams per liter	0.6384 (233)	0.7017 (256)
25 grams per liter	0.6715 (245)	0.7381 (269)
DIFFERENCE (Additional Emission Reductions with the 25 grams per liter limit)	0.0331 (12)	0.0364 (13)

[1] For additional details, see the May 2009 Draft Background Paper, Appendix F, Proposed Amended Rule 321, Sections B.13, B.15, G.3, J.11, L.11, M.2, and M.3.

District Justification for Adopting 25 Grams per Liter Provisions

a. The Air Resources Board and the Environmental Protection Agency have both recommended that the District adopt the 25 gr/l provisions.

b. Industry and solvent cleaning machine and solvent vendors have complied with the 25 gr/l limit in other air districts for several years and compliant solvents are readily available.

c. The new State limits for consumer products in California Code of Regulations, Title 17, Section 94597 et seq. includes a limit for multi-purpose solvent & paint thinner that is comparable to 25 gr/l. Thus, adopting the 25 gr/l limit in Rule 321 will avoid having a disproportional high Rule 321 "general solvent use" ROC limit compared to the State consumer product limit.

d. It is likely that sources complying with the 50 gr/l limit will end up using a 25 gr/l solvent anyway because of availability and cost-savings.

e. The District's 2007 Clean Air Plan (CAP) indicates that Rule 321 may be revised to have a 25 gr/l limit in the future. Although the adoption of Rule 321 changes have been delayed, the implementation of a 25 gr/l limit should be made now to be consistent with the requirement to adopt of all feasible measures.

f. With all of the special exemptions staff is building into the revised rules, the regulated community should not have major concerns with the 25 gr/l provisions.

Possible Concerns About Adopting 25 Grams per Liter Provisions

a. The Rule 321 project has been predicated on fulfilling 2007 CAP commitments and using 50 gr/l provisions. The District should keep the 50 gr/l provisions and perform a "further study" on 25 gr/l.

b. The other air districts that currently have the 25 gr/l provisions initially had 50 gr/l provisions. The regulated community in Santa Barbara County needs to be given the same opportunity of adjusting to the 50 gr/l provisions first and then ratcheting down to 25 gr/l, but only if the District makes the finding that it is necessary to lower the provisions.

c. The additional emission reductions from the 25 gr/l limit, around 12 tons per year, are minimal compared to the overall 200 plus tons per year of emission reductions. The extra 5 percent is not worth the effort.

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LIST OF TOXIC AIR CONTAMINANTS[a]

COMPOUND	LISTED IN THE AB 2588 EMISSION INVENTORY CRITERIA & GUIDELINES DOCUMENT, APPENDIX A-I[b]	LISTED IN 17 CCR SECTION 93000[c]	LISTED IN 17 CCR SECTION 93001[c,d]
Acetaldehyde	X		X
Acetamide	X		X
Acetonitrile	X		X
Acetophenone; Methyl phenyl ketone	X		X
2-Acetylaminofluorene [PAH-Derivative, POM]; N-fluoren-2-yl acetamide	X		X
Acrolein	X		X
Acrylamide	X		X
Acrylic acid	X		X
Acrylonitrile; Vinyl cyanide	X		X
Allyl chloride; 3-Chloropropene	X		X
Aluminum	X		
Aluminum oxide (fibrous forms)	X		
2-Aminoanthraquinone [PAH-Derivative, POM]	X		
4-Aminobiphenyl [POM]	X		X
Amitrole	X		
Ammonia	X		
Ammonium nitrate	X		
Ammonium sulfate	X		
Aniline	X		X
o-Anisidine	X		X
Anthracene [PAH, POM]	X		
Antimony	X		
Antimony compounds			X
Antimony compounds including but not limited to: Antimony trioxide	X		
Arsenic	X		
Arsenic compounds			X
Arsenic compounds (inorganic) including but not limited to: Arsine	X		
Arsenic compounds (other than inorganic)	X		
Arsenic, Inorganic, see Inorganic Arsenic		X	
Arsine	X		
Asbestos			X
Asbestos [asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite (amosite), tremolite, actinolite, and anthophyllite]		X	
Asbestos, see Mineral fibers (other than man-made)	X		
Barium	X		
Barium chromate	X		
Barium compounds	X		
Benz[a]anthracene [PAH, POM]	X		
Benzene	X	X	X
Benzidine (and its salts) [POM]	X		
Benzidine; 4-4'-diaminobiphenyl			X
Benzidine-based dyes [POM] including but not limited to: Direct Black 38 [PAH-Derivative, POM] Direct Blue 6 [PAH-Derivative, POM] Direct Brown 95 (technical grade) [POM]	X		
Benzo[a]pyrene [PAH, POM]	X		
Benzo[b]fluoranthene [PAH, POM], see PAH	X		
Benzofuran	X		
Benzoic trichloride; Benzotrichloride	X		
Benzo[j]fluoranthene [PAH, POM]	X		
Benzo[k]fluoranthene [PAH, POM]	X		
Benzotrichloride			X

Benzoyl chloride	X		
Benzoyl peroxide; dibenzoyl peroxide	X		
Benzyl chloride, alpha-chlorotoluene	X		X
Beryllium, and beryllium compounds	X		
Beryllium compounds			X
Biphenyl [POM]; diphenyl; phenylbenzene	X		X
Bis(2-chloroethyl) ether; DCEE, see Dichloroethyl ether	X		
Bis(chloromethyl) ether, see bis-Chloromethyl ether	X		X
Bis(2-ethylhexyl)adipate	X		
Bis(2-ethylhexyl)phthalate (DEHP)			X
Bromine	X		
Bromine compounds (inorganic) including but not limited to: Bromine pentafluoride Hydrogen bromide Potassium bromate	X		
Bromine pentafluoride	X		
Bromoform; tribromomethane	X		X
1,3-Butadiene	X	X	X
2-Butanone, see Methyl ethyl ketone (MEK)	X		X
tert-Butyl acetate; t-Butyl acetate; tBAc	X		
Butyl acrylate	X		
n-Butyl alcohol; 1-butanol	X		
sec-Butyl alcohol	X		
tert-Butyl alcohol	X		
Butyl benzyl phthalate	X		
Cadmium compounds	X		X
Cadmium (metallic cadmium and cadmium compounds)		X	
Calcium cyanamide	X		X
Caprolactam	X		X
Captafol	X		
Captan	X		X
Carbaryl [PAH-Derivative, POM]; 1-naphthyl N-methylcarbamate	X		X
Carbon black extracts	X		
Carbon disulfide	X		X
Carbon tetrachloride; Tetrachloromethane	X	X	X
Carbonyl sulfide	X		X
Carrageenan (degraded)	X		
Catechol; pyrocatecho	X		X
Chloramben	X		X
Chlordane; 1,2,44,5,6,7,8-octochloro-3a,4,7,7a-tetrahydro-4,7-methanoindane	X		X
Chlorinated dibenzodioxins; dioxins; see Polychlorinated dibenzo-p-dioxins) [POM]	X		
Chlorinated paraffins (average chain length, C12; approximately 60% chlorine by weight)	X		
Chlorine	X		X
Chlorine dioxide	X		
Chloroacetic acid	X		X
2-Chloroacetophenone	X		X
p-Chloroaniline	X		
Chlorobenzene; monochlorobenzene			X
Chlorobenzenes including but not limited to: Chlorobenzene Dichlorobenzenes (mixed isomers) including: 1,2-Dichlorobenzene 1,3-Dichlorobenzene p-Dichlorobenzene; 1,4-Dichlorobenzene; 1,4-Dichlorobenzene (p) 1,2,4-Trichlorobenzene	X		X
Chlorobenzilate [POM]; Ethyl-4,4'-dichlorobenzilate	X		X
Chlorodifluoromethane; Fluorocarbon 22	X		
Chloroform; trichloromethane	X	X	X
bis-Chloromethyl ether	X		X
Chloromethyl methyl ether			X
Chloromethyl methyl ether (technical grade)	X		

Chlorophenols including but not limited to: 2-Chlorophenol 2,4-Dichlorophenol Pentachlorophenol Tetrachlorophenols including but not limited to: 2,3,4,6-Tetrachlorophenol 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol	X		
4-Chloro-o-phenylenediamine	X		
Chloropicrin; trichloronitromethane	X		
Chloroprene; 2-chloro-1,3-butadiene	X		X
p-Chloro-o-toluidine	X		
Chromium	X		
Chromium compounds			X
Chromium compounds (other than hexavalent)	X		
Chromium, Hexavalent, see Hexavalent chromium (CR VI))		X	
Chromium, hexavalent (and compounds) including but not limited to: Barium Calcium chromate Chromium trioxide Lead chromate Sodium dichromate Strontium chromate	X		
Chrysene [PAH, POM]	X		
Cobalt compounds			X
Cobalt	X		
Cobalt compounds	X		
Coke oven emissions	X		X
Copper and copper compounds	X		
Creosotes	X		
p-Cresidine	X		
m-Cresol	X		X
o-Cresol	X		X
p-Cresol	X		X
Cresols (mixtures of); Cresylic acid; including: m-Cresol o-Cresol p-Cresol	X		
Cresols/Cresylic acid (isomers and mixture)			X
Crotonaldehyde	X		
Cumene; isopropylbenzene	X		X
Cumene hydroperoxide	X		
Cupferron	X		
Cyanide compounds			X
Cyanide compounds including but not limited to: Hydrocyanic acid	X		
Cyclohexane	X		
Cyclohexanol	X		
Cycloheximide	X		
2,4-D, salts and esters			X
DDE, see Dichlorodiphenyldichloroethylene			X
Decabromodiphenyl oxide [POM], see Polybrominated diphenyl ethers	X		
Dialkylnitrosamines including but not limited to: N-Nitrosodi-n-butylamine N-Nitrosodiethanolamine N-Nitrosodiethylamine N-Nitrosodimethylamine N-Nitrosodi-n-propylamine N-Nitrosomethylethylamine	X		
2,4-Diaminoanisole	X		
2,4-Diaminotoluene; 2,4-Toluenediamine; 2,4-Toluene diamine	X		X
Diaminotoluenes (mixed isomers) including but not limited to: 2,4-Diaminotoluene; 2,4-Toluenediamine	X		X
Diazomethane	X		X
Dibenz[a,h]acridine [POM]	X		

Dibenz[a,j]acridine [POM]	X		
Dibenz[a,h]anthracene [PAH, POM], see PAH	X		
7H-Dibenzo[c,g]carbazole [PAH, POM], see PAH	X		
Dibenzo[a,e]pyrene [PAH, POM], see PAH	X		
Dibenzo[a,h]pyrene [PAH, POM], see PAH	X		
Dibenzo[a,i]pyrene [PAH, POM], see PAH	X		
Dibenzo[a,l]pyrene [PAH, POM], see PAH	X		
Dibenzo-p-dioxins and Dibenzofurans chlorinated in the 2,3,7 and 8 positions and containing 4,5,6 or 7 chlorine atoms		X	
Dibenzofurans (chlorinated), see Polychlorinated dibenzofurans [POM]	X		
Dibenzofuran [POM]	X		
Dibenzofurans			X
1,2-Dibromo-3-chloropropane; DBCP	X		X
2,3-Dibromo-1-propanol	X		
Dibutyl phthalate; Dibutylphthalate	X		X
p-Dichlorobenzene; 1,4-dichlorobenzene; 1,4-Dichlorobenzene (P)			X
p-Dichlorobenzene; 1,4-Dichlorobenzene; see Chlorobenzenes	X		
1,4-Dichlorobenzene; p-Dichlorobenzene			X
3,3'-Dichlorobenzidine; 4,4'-diamino-3,3'-dichlorobiphenyl	X		X
Dichlorodiphenyldichloroethylene [POM], DDE	X		X
1,1-Dichloroethane; Ethylidene dichloride	X		
Dichloroethyl ether; bis(2-chloroethyl) ether; DCEE	X		X
Dichlorophenoxyacetic acid, salts and esters	X		
1,2-Dichloropropane, see Propylene dichloride	X		
1,3-Dichloropropene	X		X
Dichlorvos; DDVP; 2,2-dichlorovinyl dimethyl phospate	X		X
Dicofol [POM]	X		
Diesel engine exhaust	X		
Diesel engine exhaust, particulate matter (see particulate emissions from diesel-fueled engines too)	X	X	
Diesel engine exhaust, total organic gas	X		
Diesel fuel (marine)	X		
Diethanolamine	X		X
Di(2-ethylhexyl) phthalate; DEHP, see Di-sec-octyl phthalate	X		
Diethylhexylphthalate; DEHP, see Di-sec-octyl phthalate	X		
Diethyl sulfate	X		X
3,3'-Dimethoxybenzidine [POM]	X		X
4-Dimethylaminoazobenzene [POM]; Dimethyl aminoazobenzene	X		X
N,N-Dimethylaniline; dimethylaniline	X		X
7,12-Dimethylbenz[a]anthracene [PAH-Derivative, [POM]	X		
3,3'-Dimethylbenzidine [POM]; o-Tolidine; 3,3'-Dimethyl benzidine	X		X
Dimethyl carbamoyl chloride	X		X
Dimethyl formamide	X		
Dimethylformamide; DMF			X
1,1-Dimethylhydrazine	X		X
Dimethyl phthalate	X		X
Dimethyl sulfate; methyl sulfate	X		X
3,3'-Dimethyoxybenzidine			X
4,6-Dinitro-o-cresol (and salts)	X		X
2,4-Dinitrophenol	X		X
1,6-Dinitropyrene [PAH-Derivative, POM]	X		
1,8-Dinitropyrene [PAH-Derivative, POM]	X		
2,4-Dinitrotoluene	X		X
Dinitrotoluenes (mixed isomers) including but not limited to: 2,4-Dinitrotoluene 2,6-Dinitrotoluene	X		
1,4 Dioxane; 1,4-Diethyleneoxide	X		X
Dioxins (Chlorinated dibenzodioxins) (see Polychlorinated dibenzo-p-dioxins) [POM]	X		
Diphenylhydantoin [POM]	X		
1,2-Diphenylhydrazine [POM]; Hydrazobenzene	X		X
Dipropylene glycol	X		
Dipropylene glycol methyl ether	X		

Di-sec-octyl phthalate; bis(2-ethylhexyl) phthalate; diethylhexylphthalate	X		
Environmental Tobacco Smoke	X	X	
Epichlorohydrin, 1-chloro-2,3 epoxypropane	X		X
Epoxy resins	X		
1,2-Epoxybutane	X		X
Ethyl acrylate	X		X
Ethylbenzene	X		X
Ethyl carbamate; Urethane			X
Ethyl chloride; chloroethane	X		X
Ethyl-4,4'-dichlorobenzilate (see Chlorobenzilate)	X		
Ethylene	X		
Ethylene dibromide; 1,2 dibromoehane	X	X	X
Ethylene dichloride; 1,2,-dichlroethane	X	X	X
Ethylene glycol	X		X
Ethylene glycol diethyl ether, 1,2 dicthoxyethane	X		
Ethylene glycol dimethyl ether; 1,2-dimethoxyethane, G'-yme	X		
Ethylene glycol monobutyl ether	X		
Ethylene glycol monoethyl ether, see 2-Ethoxyethanol	X		
Ethylene glycol monomethyl ether, see 2-Methoxyethanol	X		
Ethylene glycol monoethyl ether acetate	X		
Ethylene glycol monomethyl ether acetate	X		
Ethylene glycol monopropyl ether	X		
Ethyleneimine; Aziridine	X		X
Ethylene oxide	X	X	X
Ethylene thiourea	X		X
Ethylidene dichloride; 1,1-Dichloroethane)			X
Fine mineral fibers			X
Fluorides and compounds including but not limited to: Hydrogen fluoride	X		
Fluorocarbons (brominated)	X		
Fluorocarbons (chlorinated) including but not limited to: Chlorinated fluorocarbon; CFC-113; 1,1,2-Trichloro-1,2,2-trifluoroethane Chlorodifluoromethane; Fluorocarbon 22 Dichlorofluoromethane; Fluorocarbon 12 Dichlorofluoromethane; Fluorocarbon 21 Trichlorofluoromethane; Fluorocarbon 11	X		
Formaldehyde	X	X	X
Furan	X		
Gasoline engine exhaust including but not limited to: Gasoline engine exhaust (condensates & extracts) Gasoline engine exhaust, particulate matter Gasoline engine exhaust, total organic gas	X		
Gasoline Vapors	X		
Glutaraldehyde	X		
Glycol ethers			X
Glycol ethers and their acetates including but not limited to: Diethylene glycol Diethylene glycol dimethyl ether Diethylene glycol monobutyl ether Diethylene glycol monoethyl ether Diethylene glycol monomethyl ether Dipropylene glycol Dipropylene glycol monomethyl ether Ethylene glycol diethyl ether Ethylene glycol dimethyl ether Ethylene glycol monobutyl ether Ethylene glycol monoethyl ether Ethylene glycol monoethyl ether acetate; PGMEA Ethylene glycol monomethyl ether Ethylene glycol monomethyl ether acetate Ethylene glycol monopropyl ether Propylene glycol monomethyl ether Propylene glycol monomethyl ether acetate Triethylene glycol dimethyl ether	X		

Heptachlor; 1,4,5,6,7,8,8-hepta-chloro-3a,4,7,7a tetrahydro 4,7 methanoindene	X		X
1,2,3,4,6,7,8-Heptachlorodibenzofuran see Polychlorinated dibenzofurans	X		
1,2,3,4,7,8,9-Heptachlorodibenzofuran see Polychlorinated dibenzofurans	X		
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin see Polychlorinated dibenzo-p-dioxins	X		
Hexachlorobenzene	X		X
Hexachlorobutadiene	X		X
Hexachlorocyclohexanes (mixed or technical grade) including but not limited to: alpha-Hexachlorocyclohexane beta-Hexachlorocyclohexane Lindane; gamma-Hexachlorocyclohexane	X		
Hexachlorocyclopentadiene	X		X
1,2,3,4,7,8-Hexachlorodibenzofuran see Polychlorinated dibenzofurans	X		
1,2,3,6,7,8-Hexachlorodibenzofuran see Polychlorinated dibenzofurans	X		
1,2,3,7,8,9-Hexachlorodibenzofuran see Polychlorinated dibenzofurans	X		
2,3,4,6,7,8-Hexachlorodibenzofuran see Polychlorinated dibenzofurans	X		
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin see Polychlorinated dibenzo-p-dioxins	X		
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin see Polychlorinated dibenzo-p-dioxins	X		
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin see Polychlorinated dibenzo-p-dioxins	X		
Hexachloroethane; perchloroethane	X		X
Hexamethylene diisocyanate; HDI; Hexamethylene-1,6-diisocyanate			X
Hexamethylphosphoramide	X		X
Hexane	X		X
Hexavalent chromium (CR (VI))	X	X	
Hydrazine	X		X
Hydrobromic acid, see Hydrogen bromide	X		
Hydrochloric acid, see Hydrogen chloride	X		
Hydrocyanic acid (see Cyanide compounds)	X		
Hydrofluoric acid, see Hydrogen Fluoride	X		
Hydrogen bromide	X		
Hydrogen chloride; Muriatic acid; Hydrochloric acid	X		X
Hydrogen cyanide	X		
Hydrogen fluoride; Hydrofluoric acid			X
Hydrogen sulfide	X		
Hydroquinone; 1,4-benezendiol	X		X
Indeno[1,2,3-cd]pyrene [PAH, POM]	X		
Inorganic Arsenic		X	
Inorganic lead, see Lead compounds (inorganic)	X		
Inorganic lead		X	
Iron pentacarbonyl	X		
Isocyanates including but not limited to: Hexamethylene-1,6-diisocyanate Methylene diphenyl diisocyanate [POM]; MDI Methyl isocyanate Toluene-2,4-diisocyanate (see Toluene diisocyanates) Toluene-2,6-diisocyanate (see Toluene diisocyanates)	X		
Isophorone	X		
Isophorone; 3,5,5-trimethyl-2-cyclohexen-1-one			X
Isoprene, except from vegetative emission sources	X		
Isopropanol, see Isopropyl alcohol	X		
Isopropyl alcohol; isopropanol	X		
4,4'-Isopropylidenediphenol	X		
Lead	X		

Lead compounds (inorganic) including but not limited to: Lead acetate Lead chromate (see Chromium, hexavalent) Lead phosphate Lead subacetate	X		
Lead compounds (other than inorganic)	X		
Lead compounds			X
Lindane (mixed or technical grade); gamma-Hexachlorocyclohexane, see Hexachlorocyclohexanes	X		
Lindane (all isomers)			X
Maleic anhydride; cis-butenedioic anhydride	X		X
Manganese	X		
Manganese compounds	X		X
Mercury	X		
Mercury compounds			X
Mercury compounds including but not limited to: Mercuric chloride Methyl mercury; Dimethylmercury	X		
Methanol, see Methyl alcohol	X		X
Methoxychlor [POM]	X		
Methoxychlor; 1,1,1-trichloro-2-2-bis(p-methoxyphenyl)ethane			X
Methyl alcohol; methanol	X		X
2-Methylaziridine; 2-Methyl aziridine; 1,2-Propyleneimine	X		
Methyl bromide; Bromomethane	X		X
Methyl chloride; Chloromethane	X		X
Methyl chloroform; 1,1,1 trichloroethane	X		X
3-Methylcholanthrene [PAH-Derivative, POM]	X		
5-Methylchrysene [PAH-Derivative, POM]	X		
4,4'-Methylene bis(2-chloroaniline) [POM]; MOCA	X		X
Methylene chloride; dichloromethane	X	X	X
4,4'-Methylenedianiline (and its dichloride) [POM]	X		
4,4’-Methylenedianiline; MDA; 4,4'-Methylene dianiline			X
Methylene diphenyl diisocyanate; MDI	X		X
Methyl ethyl ketone; MEK; 2-butanone; ethyl methyl ketone	X		X
Methyl hydrazine	X		X
Methyl iodide; Iodomethane	X		X
Methyl isobutyl ketone; Hexone; MIBK	X		X
Methyl isocyanate	X		X
2-Methyllactonitrile; Acetone cyanohydrin	X		
Methyl methacrylate; methyl 2 methyl 2 propenoate	X		X
2-Methylpyridine	X		
Methyl tert-butyl ether; MTBE; Methyl t-butyl ether	X		X
Michler's ketone [POM]	X		
Mineral fibers (fine, manmade)	X		
Mineral fibers (fine, manmade) (fine mineral fibers which are manmade and are airborne particles of a respirable size greater than 5 microns in length, less than or equal to 3.5 microns in diameter, with a length to diameter ratio of 3:1) including but not limited to: Ceramic fibers Glasswool fibers Rockwool fibers Slagwool fibers.	X		
Mineral fibers (other than manmade) including but not limited to: Asbestos Erionite Talc containing asbestiform fibers	X		
Molybdenum trioxide	X		
Naphthalene [PAH, POM]	X		X
Nickel	X		
Nickel (metallic nickel and inorganic nickel compounds)		X	
Nickel carbonyl; NI (CO)4	X		
Nickel compounds			X

Nickel compounds including but not limited to: Nickel acetate Nickel carbonate Nickel carbonyl Nickel hydroxide Nickelocene Nickel oxide Nickel subsulfide	X		
Nickel oxide	X		
Nickel refinery dust from the pyrometallurgical process	X		
Nitric acid	X		
Nitrilotriacetic acid	X		
Nitrobenzene	X		X
4-Nitrobiphenyl [POM]	X		X
6-Nitrochrysene [PAH-Derivative, POM]	X		
2-Nitrofluorene [PAH-Derivative, POM]	X		
Nitrogen mustard N-oxide	X		
4-Nitrophenol	X		X
2-Nitropropane	X		X
1-Nitropyrene [PAH-Derivative, POM]	X		
N-Nitrosodi-n-butylamine, see Dialkylnitrosamines	X		
N-Nitrosodi-n-propylamine, see Dialkylnitrosamines	X		
N-Nitrosodiethylamine	X		
N-Nitroso-n-methylurea			X
N-Nitrosodimethylamine			X
N-Nitrosodimethylamine, see Dialkylnitrosamines	X		
p-Nitrosodiphenylamine [POM]	X		
N-Nitroso-N-methylurea	X		
N-Nitrosomorpholine	X		X
N-Nitrosopiperidine	X		
N-Nitrosopyrrolidine	X		
1,2,3,4,6,7,8,9-Octachlorodibenzofuran [POM] see Polychlorinated dibenzofurans	X		
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin [POM] see Polychlorinated dibenzo-p-dioxins	X		
Oleum, see Sulfuric acid and oleum	X		
PAHs (Polycyclic aromatic hydrocarbons) [POM] including but not limited to: PAHs, total, w/o individ. components reported [PAH, POM] PAHs, total, with individ. components also reported [PAH, POM] Acenaphthene [PAH, POM] Acenaphthylene [PAH, POM] Anthracene [PAH, POM] Benz[a]anthracene [PAH, POM] Benzo[a]pyrene [PAH, POM] Benzo[b]fluoranthene [PAH, POM] Benzo[e]pyrene [PAH, POM] Benzo[g,h,i]perylene [PAH, POM] Benzo[j]fluoranthene [PAH, POM] Benzo[k]fluoranthene [PAH, POM] Chrysene [PAH, POM] Dibenz[a,h]anthracene [PAH, POM] Dibenzo[a,e]pyrene [PAH, POM] Dibenzo[a,h]pyrene [PAH, POM] Dibenzo[a,i]pyrene [PAH, POM] Dibenzo[a,l]pyrene [PAH, POM] Fluoranthene [PAH, POM] Fluorene [PAH, POM] Indeno[1,2,3-cd]pyrene [PAH, POM] 2-Methyl naphthalene [PAH, POM] Naphthalene [PAH, POM] Perylene [PAH, POM] Phenanthrene [PAH, POM] Pyrene [PAH, POM]	X		

# PAH-Derivatives (Polycyclic aromatic hydrocarbon derivatives) [POM] including but not limited to those substances listed in appendix A with the bracketed designation [PAH-Derivative, POM])	X		
Parathion; o,o-diethyl o-(p-nitrophenyl) phosphorothioate	X		X
Particulate Emissions from Diesel-Fueled Engines	X	X	
1,2,3,7,8-Pentachlorodibenzofuran see Polychlorinated dibenzofurans	X		
2,3,4,7,8-Pentachlorodibenzofuran see Polychlorinated dibenzofurans	X		
1,2,3,7,8-Pentachlorodibenzo-p-dioxin see Polychlorinated dibenzo-p-dioxins	X		
Pentachloronitrobenzene; Quintobenzene	X		X
Pentachlorophenol; PCP			X
Peracetic acid	X		
Perchloroethylene; Tetrachloroethylene; Tetrachloroethene	X	X	X
Phenol	X		X
p-Phenylenediamine			X
p-Phenylenediamine	X		
2-Phenylphenol [POM]	X		
Phosgene; carbonyl chloride, COCl2	X		X
Phosphine; PH3			X
Phosphorus	X		X
Phosphorus compounds: Phosphine Phosphoric acid Phosphorus oxychloride Phosphorus pentachloride Phosphorus pentoxide Phosphorus trichloride Tributyl phosphate Triethyl phosphine Trimethyl phosphate Triorthocresyl phosphate [POM] Triphenyl phosphate [POM] Triphenyl phosphite [POM]	X		
Phthalic anhydride	X		X
Polychlorinated biphenyls (Aroclors)			X
Polychlorinated biphenyls (PCBs) [POM] including but not limited to: 3,3',4,4'-Tetrachlorobiphenyl (PCB 77) 3,4,4',5-Tetrachlorobiphenyl (PCB 81) 2,3,3',4,4'-Pentachlorobiphenyl (PCB 105) 2,3,4,4',5-Pentachlorobiphenyl (PCB 114) 2,3',4,4',5-Pentachlorobiphenyl (PCB 118) 2,3',4,4',5'-Pentachlorobiphenyl (PCB 123) 3,3',4,4',5-Pentachlorobiphenyl (PCB 126) 2,3,3',4,4',5-Hexachlorobiphenyl (PCB 156) 2,3,3',4,4',5'-Hexachlorobiphenyl (PCB 157) 2,3',4,4',5,5'-Hexachlorobiphenyl (PCB 167) 3,3',4,4',5,5'-Hexachlorobiphenyl (PCB 169) 2,3,3',4,4',5,5'-Heptachlorobiphenyl (PCB 189)	X		
Polychlorinated dibenzo-p-dioxins; PCDDs or Dioxins [POM] including but not limited to: Dioxins, total, w/o individ. isomers reported; PCDDs [POM] Dioxins, total, with individ. isomers also reported; PCDDs [POM] 2,3,7,8-Tetrachlorodibenzo-p-dioxin; TCDD [POM] 1,2,3,7,8-Pentachlorodibenzo-p-dioxin [POM] 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin [POM] 1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin [POM] 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin [POM] 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin [POM] 1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin [POM] Total Tetrachlorodibenzo-p-dioxin [POM] Total Pentachlorodibenzo-p-dioxin [POM] Total Hexachlorodibenzo-p-dioxin [POM] Total Heptachlorodibenzo-p-dioxin [POM]	X		

Polychlorinated dibenzofurans; PCDFs or Dibenzofurans [POM] including but not limited to: Dibenzofurans (Polychlorinated dibenzofurans); PCDFs [POM] 2,3,7,8-Tetrachlorodibenzofuran [POM] 1,2,3,7,8-Pentachlorodibenzofuran [POM] 2,3,4,7,8-Pentachlorodibenzofuran [POM] 1,2,3,4,7,8-Hexachlorodibenzofuran [POM] 1,2,3,6,7,8-Hexachlorodibenzofuran [POM] 1,2,3,7,8,9-Hexachlorodibenzofuran [POM] 2,3,4,6,7,8-Hexachlorodibenzofuran [POM] 1,2,3,4,6,7,8-Heptachlorodibenzofuran [POM] 1,2,3,4,7,8,9-Heptachlorodibenzofuran [POM] 1,2,3,4,6,7,8,9-Octachlorodibenzofuran [POM] Total Tetrachlorodibenzofuran [POM] Total Pentachlorodibenzofuran [POM] Total Hexachlorodibenzofuran [POM] Total Heptachlorodibenzofuran [POM]	X		
Polycyclic Organic Matter			X
POM; Polycyclic organic matter, including but not limited to those substances listed in Appendix A with the bracketed designation of [POM], [PAH, POM], or [PAH-Derivative, POM])	X		
Potassium bromate	X		
1,3-Propane sultone	X		X
beta-Propiolactone	X		X
Propionaldehyde	X		X
Propoxur; 2-isopropoxyphenyl N-methyl carbamate; Baygon	X		X
Propylene	X		
Propylene dichloride; 1,2-dichloropropane	X		X
Propylene oxide; 1,2-epoxy-propane	X		X
1,2-Propyleneimine; 2-Methyl aziridine; 2-Methylaziridine	X		X
Pyridine	X		
Quinoline	X		X
Quinone	X		X
Radionuclides (including radon)			X
Radionuclides including but not limited to: Iodine-131 Radon and its decay products	X		
Reserpine [POM]	X		
Residual (heavy) fuel oils	X		
Selenium	X		
Selenium compounds including but not limited to: Hydrogen selenide Selenium sulfide	X		
Selenium compounds, as Se			X
Silica, crystalline	X		
Silver	X		
Silver compounds	X		
Sodium hydroxide, caustic soda	X		
Styrene	X		X
Styrene oxide	X		X
Sulfuric acid and oleum	X		
Sulfuric acid	X		
Terephthalic acid	X		
2,3,7,8-Tetrachlorodibenzofuran see Polychlorinated dibenzofurans	X		
2,3,7,8-Tetrachlorodibenzo-p-dioxin see Polychlorinated dibenzo-p-dioxins	X		X
1,1,2,2-Tetrachloroethane; acetylene tetrachloride	X		X
Tetrachloroethylene, see Perchloroethylene		X	X
Thallium	X		
Thallium compounds	X		
Thioacetamide	X		
Thiourea	X		
Titanium tetrachloride	X		X
Toluene; toluol	X		X
Toluene-2,4-diisocyanate; TDI; 2,4-Toluene diisocyanate	X		X
Toluene-2,6-diisocyanate	X		

2,4-Toluenediamine; 2,4-Toluene diamine; see 2,4-Diaminotoluene and Diaminotoluene	X		X
2,4-Toluenediamine, see Diaminotoluene	X		
Toluene diisocyanates including but not limited to: Toluene-2,4-diisocyanate Toluene-2,6-diisocyanate	X		
o-Toluidine; o-methylaniline	X		X
Toxaphene; Polychlorinated camphenes	X		
Toxaphene; Chlorinated camphene			X
Tributyl phosphate	X		
1,2,4-Trichlorobenzene			X
1,1,1-Trichloroethane, see Methyl chloroform	X		X
1,1,2-Trichloroethane; vinyl trichloride	X		X
Trichloroethylene; trichloroethene	X	X	X
Trichlorofluoromethane; Fluorocarbon 11	X		
2,4,5-Trichlorophenol	X		X
2,4,6-Trichlorophenol (see Chlorophenols)	X		X
1,2,3-Trichloropropane	X		
Triethylamine	X		X
Triethylene glycol dimethyl ether; Triglyme	X		
Trifluralin	X		X
1,2,4-Trimethylbenzene	X		
Trimethylbenzenes including but not limited to: 1,2,4-Trimethylbenzene	X		
2,2,4-Trimethylpentane	X		X
Triorthocresyl phosphate [POM]	X		
Triphenyl phosphate [POM], TPP	X		
Urethane; Ethyl carbamate	X		
Vanadium (fume or dust)	X		
Vanadium Pentoxide	X		
Vinyl acetate	X		X
Vinyl bromide; bromoethylene	X		X
Vinyl chloride; Chloroethene	X	X	X
4-Vinylcyclohexene	X		
Vinyl fluoride	X		
Vinylidene chloride; 1,1-dichloroethylene	X		X
Wood preservatives (containing arsenic and chromate)	X		
Xylenes (isomers and mixture)			X
Xylenes (mixed xylenes) including: m-Xylene o-Xylene p-Xylene	X		
m-Xylenes			X
o-Xylenes			X
p-Xylenes			X
Zinc	X		
Zinc compounds including but not limited to: Zinc oxide	X		

[a] This table includes pollutants determined by the State Board to be a toxic air contaminant per Health and Safety Code sections 39655 and 39657. Any pollutants added to 1) the California Code of Regulations, Title 17, Sections 93000 and 93001, or 2) the *Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values* are also considered to be a toxic air contaminant by the Santa Barbara County Air Pollution Control District.

[b] The AB 2588 Air Toxics "Hot Spots" Emission Inventory Criteria and Guidelines Regulation (Guidelines) provides direction and criteria to facilities on how to compile and submit air toxics emission data required by the "Hot Spots" Program. Appendix A-1 lists substances that must have the amount reported.

[c] "CCR" stands for California Code of Regulations. Sections 91300 and 91301 are found in Title 17, Division 3, Chapter 1, Subchapter 7.

[d] Also identified as an EPA Hazardous Air Pollutant, promulgated under the provisions of the Clean Air Act Section 112(b).