

**Socioeconomic Analysis
Proposed Regulation 8
Rules 4, 14, 19, 31 and 43
Surface Coating**

Prepared for

**Bay Area Air Quality Management District
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CONTENTS

1. Introduction and Summary.....	1
2. Description of Proposed Rules.....	3
3. Employment and Economic Impact Analysis.....	4
3.1 Affected Businesses.....	4
3.2 Cost to Affected Businesses.....	6
3.3 Cost to Small Businesses.....	7

TABLES

1. Bay Area Businesses Affected by Proposed Amendments to Various Rules of Regulation 8, Surface Coating Rules.....	1
2. Bay Area Businesses Affected by Proposed Amendments to Various Rules of Regulation 8, Surface Coating Rules	4
3. Bay Area as Percentage of California Businesses Affected by Proposed Amendments to Various Rules of Regulation 8.....	5
4. Bay Area Businesses Affected by Proposed Amendments to Regulation 8, Rules 4, 14, 19, 31, and 43.....	6
5. Distribution by Size of Bay Area Businesses Affected by Proposed Amendments to Regulation 8, Rule 4.....	7
6. Bay Area Small Businesses in Industries Affected by Proposed Amendments to Regulation 8, Rule 4.....	8
7. Impact on Bay Area Small Businesses in Industries Affected by Proposed Amendments to Regulation 8, Rules 4, 14, 19, 31, and 43.....	9

1. INTRODUCTION AND SUMMARY

This report describes the socioeconomic impacts of proposed amendments to Rules 8-4, 8-14, 8-19, 8-31 and 8-43 that are intended to reduce volatile organic compounds (VOC) emitted during the application of solvents to a variety of surfaces, including large appliances, metal parts, miscellaneous metal parts, plastics, and maritime-related infrastructure such as ships, submarines, oil platforms and barges. The analysis discusses the types of businesses that would be most affected by these rules. The report discusses the anticipated costs of compliance for the affected businesses, as well as employment and regional economic impact. The report is prepared pursuant to the provisions of AB2061 (Section 40728.5 of the California Health and Safety Code), which requires an assessment of socioeconomic impacts of proposed air quality rules.

The proposed rule amendments have the potential of affecting 588 businesses in a wide range of manufacturing and wholesale industries although, in all likelihood, of the 588, only 195 small businesses employing no more than 10 people will be most affected. Table 1 identifies the industries, which are arranged by their respective NAICS code. These industries employ an estimated 20,621 workers in the nine-county San Francisco Bay Area. As Table 1 demonstrates, some industries contain businesses that are affected by two regulatory changes, such as NAICS 332813, NAICS 332312, NAICS 332999 and NAICS 33251, whose respective industry figures are not double-counted in Table 2.

**TABLE 1
Bay Area Businesses Affected By Proposed Amendments
To Various Rules Of Regulation 8
Surface Coating Rules**

Affected Regulation and Rules	SIC	NAICS	NAICS Description
8 -- 04	3469	332116	Metal stamping
8 -- 04	3443	33241	Power boiler and heat exchanger manufacturer
8 -- 04	3429	33251	Hardware manufacturing
8 -- 04	3451	332721	Precision turned product manufacturing
8 -- 04	3471	332813	Electroplating, plating, polishing, anodizing and coloring
8 -- 04	3429	332999	All other misc. Fabricated metal products manufacturing
8 -- 14	3639	333298	All other major household appliance manufacturing
8 -- 14	3634	335211	Electric house wares and household fan manufacturing
8 -- 19	3499	33251	Hardware manufacturing (pt)
8 -- 19	3441 / 3449	332312	Fabricated structural metal manufacturing (pt)
8 -- 19	3471	332813	Electroplating, plating, polishing, anodizing, and coloring (pt)
8 -- 19	3491	332911	Industrial valve manufacturing
8 -- 19	3494 / 3497 /3499	332999	All other miscellaneous fabricated metal product manufacturing (pt)
8 -- 19	3479	339912	Silverware and hollowware manufacturing (pt)
8 -- 31	3089	326199	All other plastic products manufacturing
8 -- 43	3449	332312	Fabricated structural metal manufacturing (pt)

To satisfy the intent of the rule changes, a number of businesses will need to purchase distillation or evaporative equipment that costs \$3000. The annual cost to all businesses purchasing the needed equipment is an estimated \$640,000 that, when annualized over a ten year period at 10 percent, translates into a total cost of \$1,014,917. If the Bay Area businesses absorb all of these costs, it is estimated that they would experience less than one percent drop in profits.

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2. DESCRIPTION OF PROPOSED RULES

The amendments to the various rule of Regulation 8 are aimed at reducing the volatile organic compound emission by 2.1 tons per day and to satisfy what is referred to as the control measure SS-13, which is published within the 2001 San Francisco Bay Area Ozone Attainment Plan. The proposed amendments are consistent with proposals in the Los Angeles area, in the San Joaquin Valley, and the Sacramento area. The amendments are for Regulation 8 Rules 4, 14, 19, 31 and 43.

The original intent of Rule 4, adopted in 1974, was to control sources of solvent evaporation and surface coating by limiting the amount of more reactive organic compounds that could be emitted. In the absence of other surface coating rules for specific industries, Rule 4 applies to any solvent or surface coating operation. With the adoption of other rules for specific applications and industries, over time Rule 4 has applied to fewer and fewer sources. Examples of rules for specific surface coating applications include Rule 14, (which applies to surface coating of large appliances and metal furniture), Rule 19 (surface coating rules for miscellaneous metal parts), Rule 31 (surface coating rules for plastic parts and products), and Rule 43 (surface coating rules for ships, barges, submarines, and oil platforms)

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3. EMPLOYMENT AND ECONOMIC IMPACT ANALYSIS

3.1 AFFECTED BUSINESSES

The rule amendments would affect nearly 588 establishments in the Bay Area. Table 2 below identifies all affected industries that are present in the Bay Area. These businesses employ 20,621 workers, or approximately 1 percent of total employment in the nine-county Bay Area. The 588 establishments represent less than 1 percent of all establishments in the Bay Area.

TABLE 2
Bay Area Businesses Affected By Proposed Amendments
To Various Rules Of Regulation 8
Surface Coating Rules

Affected Regulation and Rule	SIC	NAICS	NAICS Description	Nos. of Affected Establishments	Affected Employment
8 -- 04	3469	332116	Metal stamping	41	1,866
8 -- 04	3443	33241	Power boiler and heat exchanger manufacturer	7	280
8 -- 04	3429	33251	Hardware manufacturing	15	1,066
8 -- 04	3451	332721	Precision turned product manufacturing	64	1,101
8 -- 04	3471	332813	Electroplating, plating, polishing, anodizing and coloring	99	2,543
8 -- 04	3429	332999	All other misc. Fabricated metal products manufacturing	80	1,763
8 -- 14	3639	333298	All other major household appliance manufacturing	48	1,639
8 -- 14	3634	335211	Electric housewares and household fan manufacturing	2	39
8 -- 19	3499	33251	Hardware manufacturing (pt)	15	1,066
8 -- 19	3441 / 3449	332312	Fabricated structural metal manufacturing (pt)	42	1,164
8 -- 19	3471	332813	Electroplating, plating, polishing, anodizing, and coloring (pt)	99	2,587
8 -- 19	3491	332911	Industrial valve manufacturing	15	1,090
8 -- 19	3494 / 3497 / 3499	332999	All other miscellaneous fabricated metal product manufacturing (pt)	80	1,763
8 -- 19	3479	339912	Silverware and hollowware manufacturing (pt)	5	119
8 -- 31	3089	326199	All other plastic products manufacturing	170	7,950
8 -- 43	3449	332312	Fabricated structural metal manufacturing (pt)	42	1,164
				588	20,621

Table 3 shows the importance of the affected industries relative to the Bay Area and the State of California. At 0.3 percent, the affected businesses represent a miniscule percentage of all businesses in the Bay Area. When judged against similar industries across the state, the 588 businesses suggest that the affected industries are more concentrated in the Bay Area than elsewhere in the state. Altogether, the 588 businesses represent 24 percent of all businesses in the same industries in California, as well as 26 percent of employment. For comparison, the Bay Area has 6,783,760 people, or 20 percent of California's population.

TABLE 3
Bay Area as Percentage of California Businesses Affected by
Proposed Amendments to Various Rules of Regulation 8
Surface Coating Rules

Affected Regulation and Rule	SIC	NAICS	NAICS Description	Bay Area Industry Establishments % of Total Bay Area Establishments	Bay Area Industry Establishment as % of California Industry Establishments	Bay Area Industry Employment as % of Bay Area Employment	Bay Area Industry Employment as % of California Industry Employment
8 -- 04	3469	332116	Metal Stamping	0.022%	16%	0.06%	25%
8 -- 04	3443	33241	Power Boiler And Heat Exchanger Manufacturer	0.004%	18%	0.01%	21%
8 -- 04	3429	33251	Hardware Manufacturing	0.008%	11%	0.03%	14%
8 -- 04	3451	332721	Precision Turned Product Manufacturing	0.034%	22%	0.03%	17%
8 -- 04	3471	332813	Electroplating, Plating, Polishing, Anodizing And Coloring	0.052%	16%	0.08%	18%
8 -- 04	3429	332999	All Other Misc. Fabricated Metal Products Manufacturing	0.042%	18%	0.05%	22%
8 -- 14	3639	333298	All Other Major Household Appliance Manufacturing	0.025%	29%	0.05%	32%
8 -- 14	3634	335211	Electric Housewares And Household Fan Manufacturing	0.001%	12%	0.001%	11%
8 -- 19	3499	33251	Hardware Manufacturing (Pt)	0.008%	11%	0.03%	14%
8 -- 19	3441 / 3449	332312	Fabricated Structural Metal Manufacturing (Pt)	0.022%	18%	0.04%	16%
8 -- 19	3471	332813	Electroplating, Plating, Polishing, Anodizing, And Coloring	0.052%	16%	0.08%	18%
8 -- 19	3491	332911	Industrial Valve Manufacturing	0.008%	25%	0.03%	31%
8 -- 19	3494 / 3497 /3499	332999	All Other Misc. Fabricated Metal Product Manufact (Pt)	0.042%	18%	0.05%	22%
8 -- 19	3479	339912	Silverware And Hollowware Manufacturing (Pt)	0.003%	25%	0.00%	33%
8 -- 31	3089	326199	All Other Plastic Products Manufacturing	0.09%	17%	0.24%	16%
8 -- 43	3449	332312	Fabricated Structural Metal Manufacturing (Pt)	0.02%	18%	0.04%	16%
				0.3%	24%	1%	26%

Table 4 provides more detailed economic information on affected businesses. These businesses have a combined payroll of \$787 million and slightly over \$4 billion in annual sales, or two percent of total sales in the Bay Area.

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TABLE 4
Bay Area Businesses Affected by Proposed Amendments
To Regulation 8, Rules 4, 14, 19, 31, and 43
Surface Coating Rules

Affected Regulation and Rule	SIC	NAICS	NAICS Description	No. of Affected Establishments	Affected Employment	Affected Payroll	Affected Value of Sales	Affected Value Added	Affected Capital Expenditures
8 -- 04	3469	332116	Metal stamping	41	1,866	\$76,277,498	\$284,578,636	\$146,793,278	\$6,958,948
8 -- 04	3443	33241	Power boiler and heat exchanger manufacturer	7	280	\$19,485,366	\$616,813,913	\$149,780,432	\$1,012,558
8 -- 04	3429	33251	Hardware manufacturing	15	1,066	\$45,887,083	\$156,987,445	\$91,939,264	\$2,617,998
8 -- 04	3451	332721	Precision turned product manufacturing	64	1,101	\$43,175,487	\$136,349,704	\$90,188,820	\$26,790,639
8 -- 04	3471	332813	Electroplating, plating, polishing, anodizing and coloring	99	2,543	\$93,134,552	\$261,780,978	\$184,899,697	\$10,384,523
8 -- 04	3429	332999	All other misc. Fabricated metal products manufacturing	80	1,763	\$62,998,111	\$283,136,058	\$148,054,297	\$2,252,618
8 -- 14	3639	333298	All other major household appliance manufacturing	48	1,639	\$69,570,511	\$240,481,561	\$130,006,976	\$8,797,008
8 -- 14	3634	335211	Electric housewares and household fan manufacturing	2	39	\$3,208,744	\$26,617,254	\$12,556,076	\$646,918
8 -- 19	3499	33251	Hardware manufacturing (pt)	15	1,066	\$45,887,083	\$156,987,445	\$91,939,264	\$2,617,998
8 -- 19	3441 / 3449	332312	Fabricated structural metal manufacturing (pt)	42	1,164	\$60,316,634	\$327,155,611	\$205,652,898	\$2,694,008
8 -- 19	3471	332813	Electroplating, plating, polishing, anodizing, and coloring	99	2,587	\$93,134,552	\$261,780,978	\$184,899,697	\$10,384,523
8 -- 19	3491	332911	Industrial valve manufacturing	15	1,090	\$54,465,825	\$508,942,997	\$345,944,897	\$3,036,058
8 -- 19	3494 / 3497 / 3499	332999	Other miscellaneous fabricated metal product manufacturing	80	1,763	\$62,998,111	\$283,136,058	\$148,054,297	\$2,252,618
8 -- 19	3479	339912	Silverware and hollowware manufacturing (pt)	5	119	\$4,088,903	\$16,096,081	\$9,669,861	\$79,402,008
8 -- 31	3089	326199	All other plastic products manufacturing	170	7,950	\$232,939,889	\$1,216,621,533	\$693,550,311	\$63,642,723
8 -- 43	3449	332312	Fabricated structural metal manufacturing (pt)	42	1,164	\$60,316,634	\$327,155,611	\$205,652,898	\$2,694,008
				588	20,621	\$765,548,604	\$4,075,561,771	\$2,209,036,807	\$208,235,968

3.2 Cost to Affected Businesses

For the purposes of cost estimates, it is assumed that one-third of the businesses affected by Regulation 8 Rules 4, 14, 19, 31, and 43 will purchase a distillation or evaporative equipment to comply with the proposed amendments. Another one-third will comply by the use of exempt organic compounds, meaning these business will incur no cost as a result of the proposed rule changes. The remaining third already have distillation and evaporative units and, thus, will incur no new equipment costs. An evaporator costs approximately \$3,000 and the BAAQMD staff cost analysis estimates that 213 of evaporator units would need to be purchased. The equipment cost for all affected businesses in the entire Bay Area is estimated at \$640,000 that, when annualized over a ten year period at 10% interest, equals \$1,014,917, or \$475 per business per year. When expressed as a per ton ratio

of VOC reduced, the cost of equipment are considered to be extremely cost-effective, at \$192 per ton VOC reduced.

3.3 Cost to Small Businesses

In estimating the cost of the equipment on affected industries and businesses, it is further assumed that smaller businesses within an industry are more likely to be affected by the proposed rule changes than larger businesses within the same industry. Table 5 distributes affected businesses by number of employees, and it shows that slightly over 50 percent of all affected business are small operations employing less than 10 people.

TABLE 5
Distribution by Size of Bay Area Businesses Affected
by Proposed Amendments to Regulation 8, Rule 4
Surface Coating Rules

NAICS	NAICS Description	No. of Affected Establishments	1-4	5-9	10-19	20-49	50-99	100-249	250-499	500-999	1000 or more
332116	Metal Stamping	41	15%	22%	15%	29%	5%	12%	2%	0%	0%
33241	Power Boiler And Heat Exchanger Manufacturer	7	57%	0%	0%	43%	0%	0%	0%	0%	0%
33251	Hardware Manufacturing	15	43%	26%	14%	6%	6%	3%	3%	0%	0%
332721	Precision Turned Product Manufacturing	64	22%	22%	17%	23%	16%	0%	0%	0%	0%
332813	Electroplating, Plating, Polishing, Anodizing And Coloring	99	18%	21%	18%	29%	12%	1%	0%	0%	0%
332999	All Other Misc. Fabricated Metal Products Manufacturing	80	33%	15%	26%	15%	6%	5%	0%	0%	0%
333298	All Other Major Household Appliance Manufacturing	48	35%	10%	21%	17%	8%	6%	0%	2%	0%
335211	Electric Housewares And Household Fan Manufacturing	2	0%	50%	0%	50%	0%	0%	0%	0%	0%
33251	Hardware Manufacturing (Pt)	15	43%	26%	14%	6%	6%	3%	3%	0%	0%
332312	Fabricated Structural Metal Manufacturing (Pt)	42	14%	33%	12%	26%	0%	0%	0%	0%	0%
332813	Electroplating, Plating, Polishing, Anodizing, Coloring (Pt)	99	18%	21%	18%	29%	12%	1%	0%	0%	0%
332911	Industrial Valve Manufacturing	15	27%	27%	20%	13%	7%	0%	7%	0%	0%
332999	All Other Misc Fabricated Metal Product Manufacturing (Pt)	80	33%	15%	26%	15%	6%	5%	0%	0%	0%
339912	Silverware And Hollowware Manufacturing (Pt)	5	40%	40%	0%	20%	0%	0%	0%	0%	0%
326199	All Other Plastic Products Manufacturing	170	22%	18%	13%	25%	13%	7%	1%	1%	1%
332312	Fabricated Structural Metal Manufacturing (Pt)	42	14%	33%	12%	26%	12%	2%	0%	0%	0%
Average for Affected Businesses			27%	24%	14%	23%	7%	3%	1%	0%	1%

Using information in Table 5, Table 6 estimates the economic characteristics of small business affected by the rule changes. There are an estimated 195 businesses of fewer than 10 employees that will need to implement the distillation or evaporation equipment to comply with proposed rule changes. These businesses are estimated to employ 951 workers and have aggregate sales of \$195 million.

TABLE 6
Bay Area Small Businesses in Industries Affected
by Proposed Amendments to Regulation 8, Rule 4
Surface Coating Rules

Affected Regulation and Rule	SIC	NAICS	NAICS Description	Nos. of Affected Small Business Establishments	Affected Small Business Aggregate Employment	Affected Payroll	Affected Value of Sales	Affected Value Added	Affected Capital Expenditures
8 -- 04	3469	332116	Metal stamping	14	68	\$2,764,724	\$10,314,724	\$5,320,611	\$252,231
8 -- 04	3443	33241	Power boiler and heat exchanger manufacturer	2	8	\$557,353	\$17,643,131	\$4,284,267	\$28,963
8 -- 04	3429	33251	Hardware manufacturing	5	20	\$860,590	\$2,944,222	\$1,724,275	\$49,099
8 -- 04	3451	332721	Precision turned product manufacturing	21	106	\$4,139,976	\$13,074,191	\$8,647,953	\$2,568,879
8 -- 04	3471	332813	Electroplating, plating, polishing, anodizing and coloring	33	163	\$5,981,531	\$16,812,785	\$11,875,113	\$666,942
8 -- 04	3429	332999	All other misc. Fabricated metal products manufacturing	26	106	\$3,772,847	\$16,956,525	\$8,866,714	\$134,905
8 -- 14	3639	333298	All other major household appliance manufacturing	16	63	\$2,689,866	\$9,297,949	\$5,026,573	\$340,126
8 -- 14	3634	335211	Electric housewares and household fan manufacturing	2	58	\$4,771,979	\$39,584,635	\$18,673,138	\$962,071
8 -- 19	3499	33251	Hardware manufacturing (pt)	5	20	\$852,312	\$2,915,902	\$1,707,690	\$48,627
8 -- 19	3441 / 3449	332312	Fabricated structural metal manufacturing (pt)	14	55	\$2,873,481	\$15,585,676	\$9,797,293	\$128,342
8 -- 19	3471	332813	Electroplating, plating, polishing, anodizing, and coloring	33	163	\$5,879,704	\$16,526,570	\$11,672,956	\$655,588
8 -- 19	3491	332911	Industrial valve manufacturing	5	20	\$999,386	\$9,338,525	\$6,347,695	\$55,708
8 -- 19	3494 / 3497 / 3499	332999	All other misc fabricated metal product manufacturing	26	106	\$3,772,847	\$16,956,525	\$8,866,714	\$134,905
8 -- 19	3479	339912	Silverware and hollowware manufacturing (pt)	2	7	\$226,779	\$892,724	\$536,312	\$4,403,808
8 -- 19	3446 / 3449	326199	All other plastic products manufacturing	56	278	\$8,145,571	\$42,543,495	\$24,252,451	\$2,225,494
8 -- 43	3449	332312	Fabricated structural metal manufacturing (pt)	14	96	\$4,975,725	\$26,988,183	\$16,965,010	\$222,237
				195	951	\$37,775,805.02	\$194,960,260	\$105,335,810	\$11,816,096

Table 7 provides estimates on how the cost of distillation or evaporative equipment will impact the 195 small businesses affected directly by the proposed rule changes. This table shows that the impact of purchasing the evaporation or distillation equipment on these small businesses falls well within the BAAQMD socioeconomic standards of significance, which posits that "cost impacts that are less than two to three percent of sales would not be considered significant except under special circumstances or where small businesses are required to bear capital costs for which financing may not be available or may be cost prohibitive." The annual cost of a \$3000 equipment amortized over ten years at 10 percent is \$475 per business, which, in the event of adoption of equipment pursuant to the rule changes, should not affect small or any businesses in the affected industries, given prevailing industry trends regarding payroll, sales, and value added.

TABLE 7
Impact on Bay Area Small Businesses in Industries Affected by
Proposed Amendments to Regulation 8, Rules 4, 14, 19, 31, and 43
Surface Coating Rules

Affected Regulation and Rule	SIC	NAICS NAICS Description	Annual Cost of \$3000 Equipment Amortized over 10 Years @ 10%	Nos. of Affected Small Business Establishments	Aggregate Annual Equipment Cost to Affected Small Businesses	Equipment Cost As Percent of Affected Small Business Sales
8 -- 04	3469	332116 metal stamping	\$475	14	\$6,427	0.06%
8 -- 04	3443	33241 power boiler and heat exchanger manufacturer	\$475	2	\$1,097	0.01%
8 -- 04	3429	33251 hardware manufacturing	\$475	5	\$2,351	0.08%
8 -- 04	3451	332721 precision turned product manufacturing	\$475	21	\$10,032	0.08%
8 -- 04	3471	332813 electroplating, plating, polishing, anodizing and coloring	\$475	33	\$15,518	0.09%
8 -- 04	3429	332999 all other misc. fabricated metal products manufacturing	\$475	26	\$12,540	0.07%
8 -- 14	3639	333298 all other major household appliance manufacturing	\$475	16	\$7,524	0.08%
8 -- 14	3634	335211 electric housewares and household fan manufacturing	\$475	2	\$950	0.002%
8 -- 19	3499	33251 hardware manufacturing (pt)	\$475	5	\$2,351	0.08%
8 -- 19	3441 / 3449	332312 fabricated structural metal manufacturing (pt)	\$475	14	\$6,584	0.04%
8 -- 19	3471	332813 electroplating, plating, polishing, anodizing, and coloring	\$475	33	\$15,518	0.09%
8 -- 19	3491	332911 industrial valve manufacturing	\$475	5	\$2,351	0.03%
8 -- 19	3494 / 3497 / 3499	332999 all other misc fabricated metal product manufacturing (pt)	\$475	26	\$12,540	0.07%
8 -- 19	3479	339912 silverware and hollowware manufacturing (pt)	\$475	2	\$784	0.09%
8 -- 19	3446 / 3449	326199 all other plastic products manufacturing	\$475	56	\$26,648	0.06%
8 -- 43	3449	332312 fabricated structural metal manufacturing (pt)	\$475	14	\$6,584	0.02%
			\$475	195	\$92,806	0.05%

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