APPENDIX D

Supporting Documentation for the Economic Impact Analysis

Appendix D provides additional information about the estimated compliance costs and economic impacts associated with the proposed amendments to the AB 2588 "Hot Spots" Guidelines Regulation. The descriptions of program requirements are provided in part 1; the estimated costs for a facility with one, two, three or four, and five or more engines is provided in part 2; additional information about State fees is provided in part 3; and the entire list of businesses potentially affected by the Guidelines Regulation is provided in part 4.

Because ARB staff has limited inventory and location information for stationary diesel engines, we had to make reasonable assumptions regarding the various "Hot Spots" costs that could be applicable statewide. We believe that in general, our cost estimates were conservative, and the costs are reflective of the high and low cost scenarios.

Part 1 - "Hot Spots" Program Requirements and Range of Costs

The following "Hot Spots" Program activities and estimated compliance costs associated with each requirement are listed below (a through f). These descriptions and estimated costs provide context and additional information about how the facility costs were estimated.

a) "Hot Spots" Inventory Plan and Report

Requirement: Upon notification by the local air district, subject facilities must submit a plan for developing an inventory of toxic emissions from their facility. Following approval of the inventory plan, a facility must develop an inventory report of toxic emissions subject to the "Hot Spots" Program.

Affected Facilities: Facilities with stationary diesel engines constitute the vast majority of the facilities affected by the proposed amendments to the Guidelines Regulation. For most of these facilities, there will be no "Hot Spots" costs associated with this requirement because the ATCM reporting fulfills this requirement. Facilities which emit newly listed substances or substances with updated health values may be subject to this requirement.

Range of Costs: $0 to $1,500 per facility. Costs to business for this activity will likely be low, unless the facility emits a newly listed substance in an amount that may impact public health. Facilities with multiple diesel engines near receptors may need to submit more detailed information than what is required under the stationary diesel engine ATCM.

b) "Hot Spots" Health Risk Assessment

Requirement: Facilities with high prioritization scores are required to conduct a health risk assessment.

Affected Facilities: It is estimated that over 95% of the facilities potentially impacted by the revisions to the Guidelines Regulation will have priority scores or screening risk assessments below the district risk assessment triggers.

Range of Costs: A health risk assessment for a facility with only diesel engines is likely to cost approximately $1,000 to $6,000. Risk assessments for large, complex facilities could exceed $20,000, but we anticipate that only a small number of large facilities will be subject to additional health risk assessment requirements.

c) "Hot Spots" Public Notification

Requirement: Public notification is required for facilities with a cancer risk greater than ten per million (10/million) in most, if not all, cases. The district sets the public notification requirements, and the facility is responsible for conducting public notification. This may include sending letters to nearby residences notifying them of the risk from the facility. A public consultation meeting may be required by the district in order to address concerns by the community. Industrywide facilities, like gas stations and dry cleaners, and now facilities with only diesel engines, may be treated differently for purposes of public notification. Information in newspapers or on the Internet may fulfill the initial public notification requirement in many cases.

Affected Facilities: Because several districts, including the South Coast Air Quality Management District, are considering satisfying public notification requirements through internet-based notifications and listing in newspapers, we anticipate that the number of facilities that will actually send letters to local residents to be relatively small.

Range of Costs: $0 - $20,000 per facility

d) "Hot Spots" Risk Reduction

Requirement: If a health risk assessment indicates a risk above the district risk reduction threshold, a facility must develop and implement a plan to reduce facility risk to an acceptable level.

Affected Facilities: For the overwhelming majority of potentially affected facilities, complying with the ATCM emission reduction requirements will satisfy the "Hot Spots" risk reduction requirements. Facilities with multiple engines near receptors may be required to conduct risk reduction.

Range of Costs: $500 - $30,000 on a per engine basis. The low end reflects reducing engine hours or minor mechanical modifications, the high end reflects the cost to replace an average size engine of about 200 horsepower. Costs increase for facilities with larger engines or for multiple engines that need to be replaced or retrofitted.

e) "Hot Spots" Emission Inventory Update Requirement

Requirement: Every four years, facilities subject to "Hot Spots" must submit updated emissions information to the district if their emissions have increased significantly. For facilities with diesel engines, this requirement will be relatively cost-free unless major operational changes have been made since the last information submittal. In most cases, communicating to the district that the number of diesel engine operating hours at the facility has not increased over the preceding four years would probably be sufficient.

Affected Facilities: We anticipate that most of the potentially affected facilities with only diesel engines will not be required to submit an inventory update.

Range of Costs: Costs for updating emission inventories are relatively low. However, inventory updates may trigger the district to require a new health risk assessment. This could be costly for facilities that have increased their emissions of a listed substance.

f) "Hot Spots" Program Fees

Requirement: The "Hot Spots" legislation calls for the costs of State and districts to implement the program to be recovered by fees collected from facilities subject to the "Hot Spots" Program ("Hot Spots" Fee Regulation, Section 90700-90705, Title 17, California Code or Regulations (CCR)). State and local districts have different criteria for assessing fees.

Affected Facilities: $0 to $8,000 per year for each facility. All facilities subject to the "Hot Spots" Program are potentially subject to fees, depending on the applicable State and district risk-based fee rates, and any district rules that may apply.

Part 2 - Estimated Compliance Costs for Facilities with Diesel Engines

The following cost estimates were used to determine the total compliance costs of the proposed amendments to the Guidelines Regulation, located in Table III-3. Total costs and average costs are also provided for each facility category.

Estimated Costs for Facilities with a Single Engine

ARB staff assumed that 80% of the 10,650 facilities with a single emergency standby engine will likely operate their diesel engine for 20 hrs/yr or less. This is a reasonable estimate as information reported by the district revealed that most engine owners could reduce their operating hours to 20 hrs/yr. These 8,520 facilities are not subject to the proposed amendments and incur only minimal costs. State fees would be $0, and district fees would be minimal. Facilities in this group include cellular phone towers, office buildings, and small commercial retail centers, courthouses, and police and fire stations.

The remaining 2,130 facilities are subject to "Hot Spots", but will be able to use screening health risk assessment tables to show that they comply with the proposed amendments. For an estimated 50% of these facilities, we assumed that the risk will be less than one per million (1/million) and these 1,065 facilities will not be subject to fees.

For the remaining 1,065 facilities with risks between 1 and 10 per million, State and district fees are likely to be $35 and $200, respectively, with total annual fees of $250,275 for FY 08-09, with lower fees in subsequent years when engines are replaced with cleaner engines during regular engine turnover. The low and high range of costs for a facility with a single engine are given in Table D-1.

Table D-1: Range of Costs for a Facility with One Engine

Lower-Risk Facilities	Cost per Facility	Total Costs*
8,520 facilities are not subject to proposed amendments	0	0

Higher-Risk Facilities	Cost per Facility	Total Costs
1,065 facilities pay annual State and district fees (another 1,065 are fee exempt)	$235	$250,275

Total Costs for 8,520 Lower-Risk Facilities	0
Total Costs for 2,130 Higher-Risk Facilities	$250,275
Total Costs for All 10,650 Facilities with One Engine	$250,275

Average Cost for Lower-Risk Facilities	0
Average Cost for Higher-Risk Facilities	$118
Average Cost for All 10,650 Facilities with One Engine	$24

* Total costs represent the costs for all facilities in that category to complete the specified requirement. For example, the total cost for higher-risk facilities is 1,065 x $235 = $250,275.

Estimated Costs for Facilities with Two Engines

An estimate was made that approximately 1,226 facilities, which is 80% of the 1,533 facilities with two engines, would be able to show their risk is less than 10 per million, and comply with the proposed amendments using screening health risk assessment tables to estimate risk. Compliance costs will be minimal for this group of 1,226 facilities, which includes chemical companies, hotels, and food processing facilities. State fees are likely to be $35, and annual district facility fees could increase by $200, for an increase in total fees of $288,110 in FY 08-09, with lower fees for subsequent years.

The approximately 307 remaining facilities with two engines will likely have to evaluate their risk from their diesel engines. This may include a small increase in inventory costs of approximately $200 per facility, and a simplified risk assessment based on information provided by the district at a cost of $1,000 per facility. Facilities in this group include small amusement parks, banks, hospitals, and shopping malls. To provide a reasonable estimate of costs, we assumed an estimated 40 facilities may have to conduct public notification at a cost of $1,000, and 15 facilities would be required to reduce their risk by replacing one diesel engine at an average cost of $30,000. We assumed State fees for 307 facilities are likely to be $35 per facility, with district fees estimated to be $1,000 per facility for a total of $317,745 for FY 08-09, with lower fees for subsequent years as engines turnover. The low and high range of costs, based on our assumptions for a facility with two engines, are shown in Table D-2.

Table D-2: Range of Costs For a Facility With Two Engines

Lower-Risk Facilities	Cost per Facility	Total Costs
1,226 facilities screened out by the district	0	0
1,226 facilities pay State and district fees	$235	$288,110

Higher-Risk Facilities	Cost per Facility	Total Costs
307 facilities prepare simplified risk assessment	$1,000	$307,000
40 facilities conduct public notification if risk is significant	$1,000	$40,000
15 facilities reduce risk by replacing a diesel engine	$30,000	$450,000
307 facilities pay State and district fees	$1,035	$317,745

Total Costs for 1,226 Lower-Risk Facilities	$288,110
Total Costs for 307 Higher-Risk Facilities	$1,114,745
Total Costs for All 1,533 Facilities with Two Engines	$1,402,855

Average Cost for Lower-Risk Facilities	$235
Average Cost for Higher-Risk Facilities	$3,631
Average Cost for All 825 Facilities with Two Engines	$915

The average facility cost of $915 was calculated by summing the compliance costs for the lower-risk facilities and the higher risk facilities, and dividing the total compliance costs by the total number of facilities with two engines.

Estimated Costs for Facilities with Three or Four Engines

We assumed that approximately 495 facilities, which is 60% of the 825 facilities with three or four diesel engines, will not likely have to conduct a full health risk assessment because these facilities are remotely located. This group of 495 facilities includes wineries, timber companies, and aggregate facilities. Total State fees ($35) and district fees ($300) are likely to be $165,825 in FY 08-09, with lower fees for subsequent years.

We assumed that the remaining 330 facilities will need to review and/or update their emission inventory at an average cost of $500 per facility. These facilities will also likely be required to conduct varying levels of health risk assessments. Based on information reported by facilities subject to the stationary diesel engine ATCM, this group includes facilities like hospitals, prisons, and a few large print and broadcast media companies. It is estimated that approximately 200 facilities will be able to rely on a screening risk assessment at no cost to comply with the proposed amendments, and 130 facilities will

likely need to conduct a full health risk assessment at an average cost of $4,000 per facility. Of the 130 facilities that conduct a full risk assessment, we assumed only 50 facilities are likely to be required to conduct public notification at a cost of $2,000 per facility, and 25 facilities are likely to be required to reduce their risk below the district's risk reduction threshold at a cost of $30,000 per facility. Annual State fees for 80 medium-risk facilities are likely to increase by $500 per facility, with district fees likely to increase by $1,000. Annual State fees for 50 higher-risk facilities are likely to increase by $1,000 per facility, with district fees likely to increase by $2,000. The total increase in fees is likely to be $270,000 in FY 08-09, with lower fees in subsequent years. The low and high range of costs for a facility with three or four engines are shown in Table D-3.

Table D-3: Range of Costs For a Facility With Three or Four Engines

Lower-Risk Facilities	Cost per Facility	Total Costs
District determines risk is not significant, 495 facilities comply with proposed amendments	$500	$111,000
495 facilities pay State and district fees for low-risk facility	$335	$165,825

Higher-Risk Facilities	Cost per Facility	Total Costs
330 facilities prepare new emission inventories	$500	$165,000
130 facilities required to update existing risk assessment or conduct new risk assessment	$4,000	$520,000
50 facilities conduct public notification if risk is significant	$2,000	$100,000
25 facilities reduce risk by replacing a diesel engine	$30,000	$750,000
80 facilities pay State and district fees of $1,500; 50 facilities pay higher State and district fees of $3,000	$1,500 or $3,000	$270,000

Total Costs for 495 Lower-Risk Facilities	$165,825
Total Costs for 330 Higher-Risk Facilities	$1,805,000
Total Costs for All 825 Facilities with Three or Four Engines	$1,970,825

Average Cost for Lower-Risk Facilities	$335
Average Cost for Higher-Risk Facilities	$5,470
Average Cost for All 825 Facilities with Three or Four Engines	$2,389

Estimated Costs for Facilities with Five or More Engines

ARB staff assumed that approximately 50% of the 444 facilities with five or more diesel engines are likely to have engines spread over a large area with few nearby receptors and will likely not have to conduct a health risk assessment, public notification, or risk reduction. This is a reasonable assumption because according to the data provided by facilities subject to the stationary diesel engine ATCM, facilities with five or more engines include military bases, some utilities (water and sanitation districts), and other remotely located facilities. State fees are not expected to change, while annual district fees are likely to increase by $500 per facility, for a total increase in district fees of $111,000 for these 222 facilities.

We assumed that the remaining 222 facilities with five or more engines are likely to be located closer to receptors, and most of these facilities will be required to either conduct a new health risk assessment, or update their health risk assessment, to include the risk from diesel engines. This group of facilities includes refineries, universities, and large manufacturing facilities, most of which have other toxics and are likely already subject to the “Hot Spots” Program. Inventory costs are estimated to be $1,500, and an updated health risk assessment is estimated to cost $6,000 for 222 facilities. An estimated 100 facilities will likely be required to conduct public notification (at a cost of $2,000 per facility), and 40 facilities will likely be required to reduce their risk (at a cost that could exceed $30,000 per facility). State fees for those 100 facilities are assumed to increase by $1,000 per facility, and district fees will likely increase by $3,000 per facility, for a total estimated increase in State and district fees of $400,000 for FY 08-09, with lower fees for subsequent years, when program requirements are fully implemented and risk has been reduced. The remaining 122 facilities are not expected to be subject to additional fees. Table D-4 provides a cost breakdown for both lower-risk facilities and higher-risk facilities.

Table D-4: Range of Costs for a Facility with Five or More Engines

Lower-Risk Facilities	Cost per Facility	Total Costs
District determines that 222 facilities comply with proposed amendments and pay a district fee	$500	$111,000

Higher-Risk Facilities	Cost per Facility	Total Costs
222 facilities prepare new emission inventory plans and reports	$1,500	$333,333
222 facilities conduct a health risk assessment	$6,000	$1,332,000
100 facilities pose a potential significant risk and conduct public notification	$2,000	$200,000
40 facilities reduce risk by replacing a diesel engine	$30,000	$1,200,000
100 facilities pay higher State and district fees; 122 facilities are not subject to additional fees	$4,000	$400,000

Total Costs for 222 Lower-Risk Facilities	$111,000
Total Costs for 222 Higher-Risk Facilities	$3,465,000
Total Costs for All 444 Facilities with Five or More Engines	$3,576,000

Average Cost for Lower-Risk Facilities	$500
Average Cost for Higher-Risk Facilities	$15,608
Average Cost for All Facilities with Five or More Engines	$8,054

Part 3 - State Fees

The following information summarizes the State fee rates for each risk category for facilities subject to AB 2588 “Hot Spots” State fees. Based on the risk posed by the facility, the State and districts assess “Hot Spots” State and district fees on facilities that fall in one of the risk-based fee categories. The State fees will be assessed no earlier than FY 08-09, with district fees already being applied in some districts. Most affected facilities with diesel engines will either be exempt from State fees, or pay the same State fee of $35 per year as an “industrywide” facility. Large facilities with a combination of toxic emissions that require a refined risk analysis will pay higher fees. State fees for facilities currently in the “Hot Spots” Program range from $67 to $6,363, with higher risk facilities paying higher fees. State fees are estimated to be $380,255 for FY 08-09. The State fee rates are listed in Table D-5.

Table D-5: State Fee Rates for Each Risk Category

Fee Category Description	State Fee ($)	Fee Category
Risk ≥ 100	5,693 to 6,363	D
50 ≤ Risk < 100	4,353 to 5,023	C
10 ≤ Risk < 50; or acute or chronic hazard index > 1	3,014 to 3,684	B
Priority Score > 10	1,674 to 2,344	A
Unprioritized	402 to 804	E
1 ≤ Risk < 10; or 0.1 ≤ acute or chronic hazard index ≤ 1.0	67 to 134	F
Industrywide	35	IW
Priority Score ≤10	0	Fee Exempt
Priority Score ≤1 or Risk <1	0	Exempt from Program

Source: Air Toxics "Hot Spots" Fee Regulation, (Section 90700-90705, Title 17, California Code of Regulations (CCR)).

Part 4 – List of Potentially Affected Businesses

The list of industries with affected businesses potentially subject to the proposed amendments to the Guidelines Regulation is provided in Table D-6. Many industries will be made up mostly of businesses with only a single diesel engine operating less than 20 hrs/yr, and will not be subject to the regulation. Some facilities like refineries, power plants, and large schools and hospitals, may have multiple diesel engines, and these businesses are the focus of the economic impact analysis.

Because many businesses in each of these industries are not subject to the proposed amendments to the Guidelines Regulation, ARB staff used individual business financial data whenever possible to determine economic impacts. The names of businesses were taken directly from the information provided by facilities subject to the ATCM. Although it is possible that other industries operate diesel engines and are subject to the Guidelines Regulation, ARB staff determined that the diesel engine information provided pursuant to the ATCM was representative of any other businesses that have not complied with the reporting requirements in the ATCM.

Table D-6: List of Industries with Affected Businesses

Industry	SIC Code
1. Aerospace	3669/3812
2. Amusement Parks	7996/7999
3. Colleges and Universities	8221
4. Computer Storage Devices	3571/3572
5. Commercial Office Buildings and Retail Centers	1542
6. Communications	3661/3663
7. Financial Institutions	6021
8. Food Services	4222/5411
9. Hospitals	8062
10. Hotels/Motels	7011
11. Large Manufacturers (cement, glass, etc.)	Multiple SICs
12. Refineries	1311/2911
13. Retirement Homes	6513
14. Scientific Laboratories	8071
15. Sewerage Systems and Water Supply	9511
16. Telecommunications (High tech industries, electronics)	4813