SANTA BARBARA COUNTY AIR POLLUTION CONTROL DISTRICT
AIR TOXICS "HOT SPOTS" PROGRAM
2004 ANNUAL REPORT

EXECUTIVE SUMMARY

The Air Toxics "Hot Spots" Program has significantly reduced the amount of air toxics emitted in Santa Barbara County. Since 1991, the number of significant risk facilities has been reduced by 92 percent. Currently, only four sources exceed the Board-approved significant health risk thresholds. Emission controls for reducing risk have been identified for two of these. A third is being reevaluated to determine its current risk. The fourth must reduce its risk to less than significant levels by August 2006. Non-significant sources are maintaining their risk status by submitting emission information in their quadrennial updates. Gas stations, part of the "industry-wide" category, were prioritized in 2004 to ensure that the APCD Board-approved significant risk thresholds were not exceeded. Additional small businesses or "industry-wide" sources remain to be prioritized.

OVERVIEW

The Air Toxics "Hot Spots" Information and Assessment Act requires businesses and industries throughout the state to: 1) quantify and report their emissions of listed air toxics; 2) assess the possible health risks from their emissions; 3) notify members of the public who are exposed to significant risks attributable to their emissions; and, 4) take steps to reduce this risk. The California Health and Safety Code (HSC, § 44363) requires air pollution control districts to prepare and publish an annual report describing the status of their Air Toxics "Hot Spots" Program. This annual report summarizes the status of the Air Toxics "Hot Spots" Program in Santa Barbara County as of December 31, 2004, and is being submitted to the Santa Barbara County APCD Board of Directors in a public meeting on October 20, 2005. Consistent with HSC requirements, this report is also being provided to Santa Barbara County Environmental Health Services officials. It is available to the public, and may also be downloaded from the APCD's website at: http://www.sbcapcd.org/biz/airtoxrpt.htm. Additional information about the APCD's "Hot Spots" Program is provided on the APCD's Air Toxics web pages. These web pages provide the public with easy access to detailed information about the "Hot Spots" Program as well as information about health risks associated with chemicals emitted by neighboring businesses. The web pages for the significant risk facilities may be accessed at: http://www.sbcapcd.org/biz/toxsign.htm.

This program has significantly reduced the amount of toxic air pollution emitted in Santa Barbara County. In 1991, 51 sources subject to the Air Toxics "Hot Spots" Program exceeded the Board-approved significant health risk thresholds. Currently, only four sources exceed the significant health risk thresholds, a 92% reduction. Additionally, the APCD expects that two of the four remaining significant risk sources will reduce their risk below the significance level in 2005. The graph shown on page 2 demonstrates these reductions. Table 1 (p. 2) summarizes the exceedances of the cancer and non-cancer risk thresholds by the four sources.

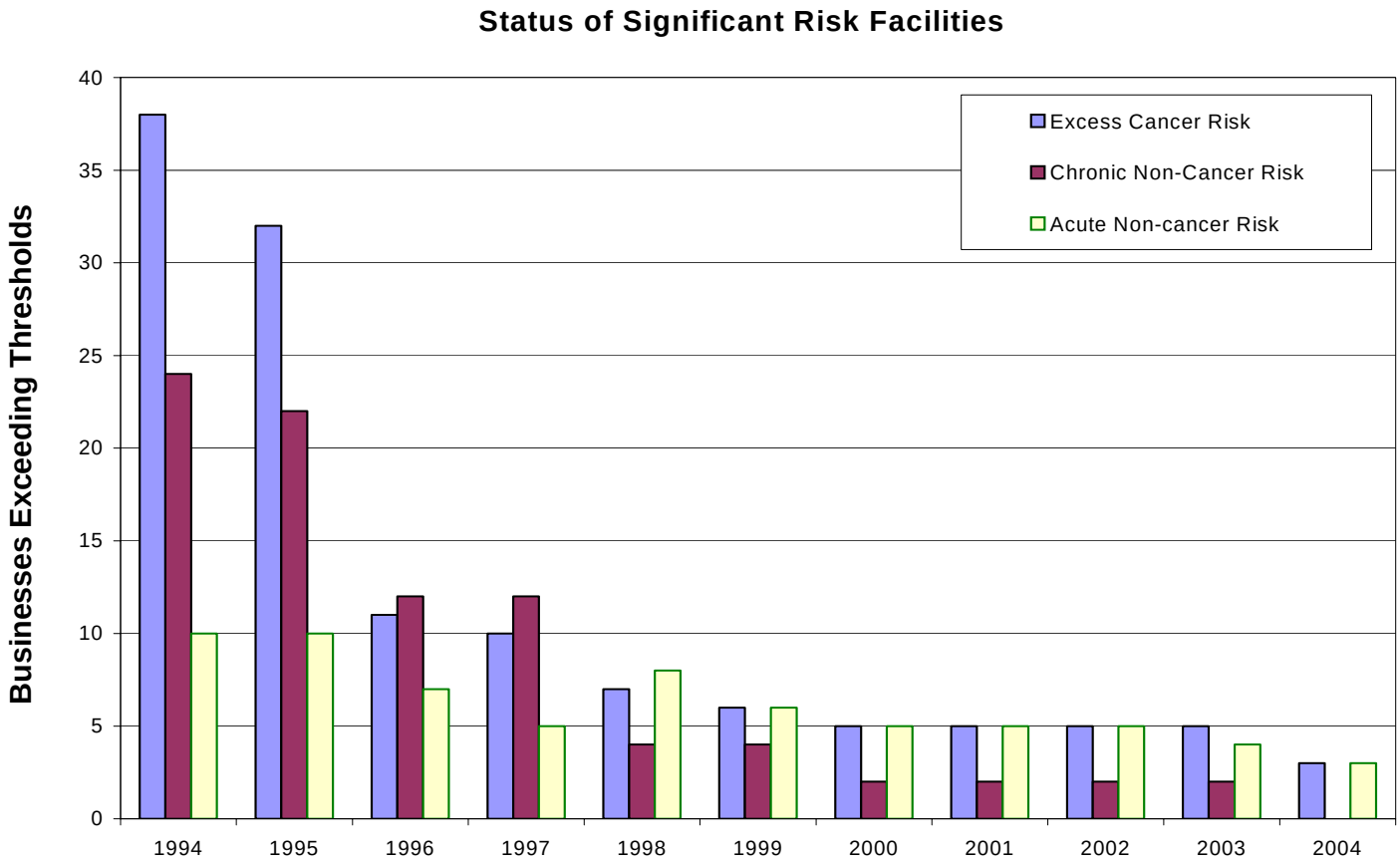

Table 1: Risk Scores for Businesses Exceeding Significant Risk Thresholds

Facility	Cancer Risk [1]	Hazard Index [2]		HRA Date
		Chronic	Acute	
Venoco Carpinternia Gas Plant & Oil Pipeline [3]	**24.7**	0.593	0.874	3/3/2005
Greka Zaca Lease [4]	5.74	0.11	**1.979**	5/20/2005
Greka Santa Maria Refinery	**20.49**	0.04	**18.22**	6/8/2000
Greka Cat Canyon Lease [5]	**12**	0.27	**22.93**	6/8/2000

Footnotes:

1) Cancer risk is measured in units of excess cases per million people. Any number greater than or equal to 10 represents significant health risk (shown in bold font).
2) Non-cancer risk is measured as a Hazard Index: the modeled concentration of pollutant/acceptable level of pollutant concentration. Any number greater than or equal to 1 represents significant health risk (shown in bold font).
3) The Venoco Carpinteria's risk scores are currently under review by Venoco and the APCD; the risk shown here represents the APCD's latest modeled estimate.
4) Greka Zaca Lease's risk scores are currently under review by Greka and the APCD; the risk shown here represents the APCD's latest modeled estimate.
5) Greka Cat Canyon Lease's HRA is in the process of being updated; the results shown here are based on the last HRA reviewed and approved by Office of Environmental Health Hazard Assessment.

HEALTH RISK

As used in this report, the term *health risk* addresses the likelihood that exposure to a given toxic air contaminant under a given set of conditions will result in an adverse health effect. Health risk is affected by several factors, such as: the amount, toxicity, and concentration of the contaminant; the meteorological conditions; the distance from emission sources to people; the distance between emission sources; the age, health, and lifestyle of the people living or working at a location; and, the duration of exposure to the toxic air contaminant.

Health effects are divided into cancer and non-cancer risks. "Cancer risk" refers to the increased chance of contracting cancer as a result of an exposure, and is expressed as a probability: chances-in-a-million. The values expressed for cancer risk do not predict actual cases of cancer that will result from exposure to toxic air contaminants. Rather, they state a possible risk of contracting cancer over and above the background level.

For non-cancer health effects, risk is characterized by a "Hazard Index" (HI), which is obtained by dividing the predicted concentration of a toxic air contaminant by a Reference Exposure Level (REL) for that pollutant that has been determined by health professionals. RELs are used as indicators of the potential adverse effects of chemicals. A REL is the concentration at or below which no adverse health effects are anticipated for specific exposure duration. Thus, the HI is a measure of the exposure relative to a level of safety and is appropriately protective of public health.

HEALTH RISK ASSESSMENTS

Health risk assessments (HRA) are performed under "Hot Spots" based on information the sources submit in their Air Toxic Emission Inventory Plans (ATEIP) and Reports (ATEIR) to the APCD. In 2004, APCD staff performed numerous HRAs for facilities in Santa Barbara County:

- A preliminary HRA was performed for Venoco Carpinteria Gas Plant and Oil Pipeline under "Hot Spots" for Reporting Year 1999. The results are presented in Table 1.

- A HRA was performed for Venoco Ellwood Oil and Gas Plant under "Hot Spots" for Reporting Year 2002. The results are discussed under the Risk Reduction section (p. 4).

- A preliminary HRA was performed for Greka Zaca Lease under "Hot Spots" for Reporting Year 2003. The results are presented in Table 1.

- A preliminary HRA was performed for Greka Cat Canyon Lease based on information provided in Greka's first submittal of the ATEIR. A revised ATEIR was submitted in early 2005. The HRA will be updated based on the approved ATEIR.

- A HRA was performed in permitting a diesel engine at Lash Construction in Santa Barbara. The HRA showed that the installation of the engine as originally applied for would create a significant health risk in the surrounding community. Through the use of an add-on control system, the risk was reduced below APCD's significance thresholds. The APCD issued an Authority to Construct permit on January 28, 2005 for the engine's installation.

- Three detailed HRAs were performed for contaminated soil projects that showed through a health analysis screening to have the potential to cause a significant risk. The results of the assessments showed that none of the contaminated soil projects would pose a significant risk to the community.

PUBLIC NOTIFICATION

Public notification is required if the results from a health risk assessment show that the facility poses a significant risk to the community (ref: HSC § 44362 (b)). In 1999, 13 businesses were considered significant risk sources, and notified the affected public of the toxic risks created by their operations. The

remaining significant risk sources identified in Table 1 will notify the affected public of the toxic risks to which they have been exposed once the health risk assessments have been finalized.

RISK REDUCTION

If a source's health risk assessment indicates a significant health risk, the source operator is required to conduct a risk reduction audit and develop a plan to implement risk reduction measures. Implementation of these measures must reduce the risks, shown in bold font in Table 1, below the significant health risk thresholds within five years of the date the plan is submitted to the APCD. Listed below are the businesses that have been required to develop and implement Risk Reduction Audits and Plans (RRAP), as well as the status of each facility in reducing its risk to the public.

Venoco – Carpinteria Gas Plant & Oil Pipeline. The original RRAP was approved October 6, 2000. In 2004, Venoco conducted source tests on three internal combustion engines for toxic air contaminants and performed extensive sampling for benzene, toluene, ethyl benzene, xylene, and hydrogen sulfide around the gas plant. A new RRAP was submitted in 2004 and revised in 2005 to address the newly identified risk from the 2004 testing. The RRAP was approved on June 13, 2005 with the following measures: 1) Enhanced Inspection and Maintenance Program to further reduce fugitive emissions; 2) Replacing 1,981 valves with non-leaking bellows valves within two years of RRAP approval to further reduce fugitive emissions; 3) removal of a large engine from service; and, 4) removal of a large storage tank from service. Risk reduction below the significance level was due July 2004. Venoco's permit was modified to include restrictions on operations of the engine and storage tank. The replacement of the valves will also require a permit modification and, pursuant to the approved RRAP, must be accomplished by June 13, 2007.

Greka – Zaca Lease. Greka submitted a revised RRAP on June 8, 2001. In addition, Greka conducted sampling around the facility to determine potential sources of hydrogen sulfide. In 2004, Greka submitted an updated ATEIP and ATEIR. Cancer and acute non-cancer risk reduction below significance levels was due July 2004. The preliminary HRA indicated that the cancer risk has been reduced. The acute risk remains above the significance level. Greka has committed to electrifying the engines that are generating the significant risk (from acrolein, a combustion product). The electrification of these engines will be documented and enforced through a new RRAP and appropriate permit modifications.

Greka – Cat Canyon Lease. Greka submitted a RRAP which is under review with APCD. In addition, Greka conducted sampling around the facility to determine potential sources of hydrogen sulfide. In 2004, Greka submitted an updated ATEIP and ATEIR. Cancer and acute non-cancer risk reduction below significance levels was due July 2004.

Greka – Santa Maria Refinery. The APCD remanded Greka's second submittal of a RRAP on February 9, 2005. Greka submitted a revised RRAP on May 9, 2005, and it is under review. Cancer and acute non-cancer risk reduction below significance levels is due August 2006.

Venoco – Ellwood Oil & Gas Plant. Venoco reduced the hydrogen sulfide-driven acute and chronic non-cancer health risks below APCD's significance levels. Since the acute risk in particular encompassed a large area of western Goleta, this reduction was a welcome step forward. The facility's significant cancer risk to the public was also reduced. A cancer risk of 23.6 in a million extends slightly off the property boundary approximately 45 meters into a vegetation easement over which Venoco exercises legal control. The public can not easily enter the area of the cancer risk footprint due to the very rugged terrain and dense vegetation. A cancer risk of 10 in a million or greater does not extend past their vegetation easement. As part of the RRAP submitted on June 22, 2005, Venoco agreed to post signs around the area of risk to warn the pubic away from entering the small risk area outside the fenceline. In addition, Venoco is using a diesel fuel additive to help reduce the amount of diesel particulate matter emissions, the risk driving pollutant.

INDUSTRY-WIDE SOURCES

Over 80% of the sources subject to the "Hot Spots" Program in Santa Barbara County are in the small business or "industry-wide" category. Each of these businesses emits less than 10 tons per year of criteria pollutants. For these sources, the APCD compiles their air toxics emissions inventory based on responses to surveys completed and submitted by the operator. The APCD performs the health risk assessments for small "industry-wide" businesses based on risk assessment methodologies developed by the California Air Pollution Control Officers Association (CAPCOA) and Office of Environmental Health Hazard Assessment. If an "industry-wide" business exceeds the significant health risk threshold, a refined risk assessment is conducted using site-specific data. If this assessment still indicates a significant risk, the facility is required to notify the public and identify and implement measures to reduce that risk.

In 2004, the APCD conducted an "industry-wide" prioritization screening for gas stations based on data collected from the 2003 annual reports. The APCD Board-approved prioritization guidelines were followed. In this screening, none of the stations exceeded the level that would trigger a more detailed HRA. The APCD determined based on the new prioritization scores that gas stations are exempt from the state and APCD annual "Hot Spots" program fees.

The APCD anticipates applying the state- and CAPCOA-approved risk assessment guidelines to auto body shops in 2006. Risk assessments for dry cleaners will be initiated once the risk assessment guidelines for dry cleaners are final.